Hospital Library

VOLUME 14 NUMBER 3

ARCHIVES
OF
DERMATOLOGY AND SYPHILOLOGY

EDITORIAL BOARD

WILLIAM ALLEN PUSEY, Chicago

WILLIAM T. CORLETT, Cleveland MILTON B. HARTZELL, Philadelphia

MARTIN F. ENGMAN, St. Louis GEORGE M. MacKEE, New York City

CHARLES J. WHITE, Boston

SEPTEMBER, 1926

PUBLISHED MONTHLY BY AMERICAN MEDICAL ASSOCIATION, 535 NORTH DEARBORN STREET, CHICAGO, ILLINOIS. ANNUAL SUBSCRIPTIONS, $8.00

Entered as Second-Class Matter, October 30, 1917, at the Postoffice at Chicago, Illinois, Under Act of Congress of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 29, 1918.

CONTENTS OF PREVIOUS NUMBER

AUGUST, 1926. NUMBER 2

A Study of Thirty-Four Cases of Rapidly Developing Syphilitic Paraplegia. Mon-Fah Chang, M.D., Peking, China.

The Rose Bengal Test for Liver Function, With Particular Reference to Its Use in the Therapy of Syphilis. N. H. Epstein, M.D., and J. E. Rauschkolb, M.D., Cleveland.

Hair Dyes and Their Toxic Effects: Classification and Description. Lawrence E. McCafferty, M.D., New York.

Cutaneous Manifestations of Protein Allergy. George Pincus, M.D., and Hyman Miller, M.D., Los Angeles.

Bullous Ichthyosiform Erythroderma: Report of Two Cases. William F. Goeckerman, M.D., Rochester, Minn.

XLVIII.—Recklinghausen's Neurofibromatosis and the Skeleton: A Plea for Complete Study of the Disease. Edwin P. Lehman, M.D., St. Louis.

Congenital Partial Albinism. V. Pardo-Castello, M.D., Havana, Cuba.

Obituary:
Edward Bennett Bronson, M.D.

News and Comment:
National Dermatological Societies.
Local Dermatological Societies.
Foreign Dermatological Societies.

Abstracts from Current Literature.

Society Transactions:
Brooklyn Dermatological Society.
Chicago Dermatological Society.
New York Academy of Medicine, Section on Dermatology and Syphilis.
Philadelphia Dermatological Society.
New York Dermatological Society.

Book Reviews.

Index to Current Literature.

COPYRIGHT, 1926, BY THE AMERICAN MEDICAL ASSOCIATION

Archives of Dermatology and Syphilology

VOLUME 14 SEPTEMBER, 1926 NUMBER 3

STUDIES OF THE THERAPEUTIC EFFECT OF FEVER IN EXPERIMENTAL RABBIT SYPHILIS

THE THERMAL DEATH POINT OF SPIROCHAETA PALLIDA *

JAY FRANK SCHAMBERG, M.D.

AND

ANNA M. RULE

PHILADELPHIA

The manner in which malaria and other fevers bring about their favorable effects in syphilis, particularly neurosyphilis, is not known. Many hypotheses have been advanced to explain the action.

Plaut and Steiner [1] suggest a group relationship between the malarial and syphilitic parasites, and believe that immune bodies stimulated by the malarial infection exercise an inhibitory influence on the further growth of the spirochetes. The question of the existence of immune reactions in malaria and of the production of protective bodies is still an unsolved one.

Pötzl [2] suggests that the therapeutic effect of the malarial inoculation is due to a shifting of the reaction between the spirochetes and the nervous tissue. The abnormal permeability of the meningeal and cerebral blood vessels permits the ingress of hemolytic and other bodies which act as catalysts.

Nonne and his collaborators, Reese and Peter (quoted by Gerstmann), do not believe that the therapeutic effect is due to the fever itself but rather to certain bodies which, during the vascular dilatation that accompanies the chill, make their way into nerve tissue. They suggest that the effect is brought about through the vegetative nervous system.

Plehn [3] believes that in malarial therapy a specific effect is brought about through the broken-down plasmodia and the consequent throwing into the blood, with each paroxysm, of foreign albumins.

---

* From the Research Institute of Cutaneous Medicine of Philadelphia.

* Read at the Golden Anniversary Meeting of the American Dermatological Association, Philadelphia, May, 1926.

1. Plaut and Steiner, quoted by Gerstmann: Die Malaria-behandlung der Progressiven Paralyse, Vienna, 1925.

2. Pötzl: Ueber die Bedeutung der Liquorveränderungen im Verlauf der Wagner-Jaureggschen Behandlung der Progressiven Paralyse mit Malaria, Med. Klin. no. 46, 1923.

3. Plehn: Malaria Behandlung der Progressiven Paralyse, Zentralbl. f. d. ges. Neurol. u. Psychiat. **36**:479, 1924.

Mühlens and Kirschbaum [4] are of the opinion that the regeneration of blood cells following the destruction consequent on malaria brings about nonspecific stimulation of the defensive mechanism.

Bratz and Schulze [5] believe, on the basis of pathologic studies on the brains in paretic cases in the psychopathic hospital at Dalldorf, that malarial inoculation increases the permeability of the small blood vessels of the brain and thus permits protective substances to reach the brain tissues.

Purves-Stewart [6] is of the opinion that the pyrexia accompanying the malaria burns up the toxins which affect the cerebral cells.

In connection with this subject, it is interesting to recall the observations of several writers on the influence of malaria on the presence of spirochetes in the brain. In seven cases observed by Bratz in Dalldorf and carefully examined histologically by Bielschowsky, the patients having died toward the end or immediately after malarial treatment, no spirochetes could be found.

Kirschbaum [7] reported from the Hamburg psychiatric clinic on fourteen necropsies on patients who had general paralysis and who were treated with malaria, in which painstaking examination for spirochetes was made. There were complete negative findings.

Jahnel [8] states that patients with general paralysis who have high fever a few days before death, rarely, if ever, show spirochetes in the brain. A most interesting case is presented by Jahnel of a patient with general paralysis in whom, two weeks before a purulent febrile pleuritis, spirochetes were shown in the brain by puncture. After death, which resulted from the pleuritis, most careful histologic study failed to reveal the presence of spirochetes.

Stückgold,[9] after careful examination, was unable to find spirochetes in any organ in a one-week old syphilitic infant that died of bronchopneumonia.

It is freely admitted that in one third of the untreated patients who have general paralysis spirochetes in the brain cannot be demonstrated.

---

4. Mühlens and Kirschbaum: Parasitologische und klinische Beobachtungen bei künstlichen Malaria und Recurrens Uebertragungen, Ztschr. f. Hyg. u. Infectionskrank. **94**:1-28, 1921.

5. Bratz and Schulze: Malarial Treatment of General Paralysis, J. A. M. A. **84**:911-912 (March 21) 1925.

6. Purves-Stewart: The Treatment of General Paralysis, Brit. M. J. **1**:508, 1924.

7. Kirschbaum: Sitzungsber. d. Berl. Gesellsch. Psychiat. u. Nervenkr., Sept. 12, 1923, quoted by Gerstmann, p. 152.

8. Jahnel, quoted by Gerstmann, p. 53.

9. Stückgold: Ueber die Einfluss von interkurrenten Fieberhaften Krankheiten auf den Verlauf der Syphilis, Inaug. Dissert. Berlin, 1919.

As indicating that the destructive effect of malaria on the spirochete is not constant and uniform, Forster [10] reports finding spirochetes by brain puncture in two of three patients with general paralysis treated with malarial inoculation.

CASE 1.—Brain puncture before inoculation showed many motile spirochetes. One month after malarial inoculation, no spirochetes could be found. The patient had ten malarial paroxysms; the highest temperature was 40.25 C.

CASE 2.—Malarial inoculation was performed in June, 1922. The patient had nine paroxysms; the highest temperature was 40.5 C. The second inoculation was given in June, 1923; only three paroxysms occurred. Brain puncture was performed in September, 1925; there were numerous motile spirochetes under the dark-field microscope.

CASE 3.—Malarial inoculation was performed in March, 1924. Nine paroxysms occurred; the highest temperature was 40.2 C. The second inoculation was given in July, 1924; eleven paroxysms occurred; the highest temperature was 39.7 C. Brain puncture was performed in October, 1925. After a long search, two living spirochetes were found.

Only one piece of animal experimental work has thus far been carried out on the influence of the elevation of body temperature on the life of the spirochete.

Weichbrodt and Jahnel,[11] in 1919, published some reports of work on rabbits suffering from experimentally induced scrotal chancres. Such chancres ordinarily last for months, and spirochetes usually persist until healing. Syphilitic rabbits were placed in an incubator at a temperature of 41 C. At the end of half an hour, their temperature reached from 42 to 44 C. (rectal). At times even 45 C. was reached. Some minutes after the animals were removed, their temperature sank rapidly to normal. For a number of days, the rabbits were placed in the incubator for half an hour twice a day. The spirochetes began to lose their motility and disappear two days after the heating process. In from three to five weeks the chancres healed. A single heating to 45 C. is not sure protection against a recurrence. Repeated heating to 43 C. brings about a cure.

The term "cure" in Weichbrodt and Jahnel's experiments must be accepted with reservation. Perhaps the word should be translated as "healing." To prove the cure of scrotal or testicular syphilis in the rabbit, inoculation of an emulsion of the rabbit's inguinal glands must be shown to be negative.

---

10. Forster: Spirochätenbefunde bei mit malariabehandelten Paralytikern, München. med. Wchnschr. **72**:2197, 1925.

11. Weichbrodt and Jahnel: Einfluss hoher Körpertemperaturen auf die Spirochöten und Krankheitserscheinungen der Syphilis in Tierexperiment, Deutsche med. Wchnschr. **45**:483, 1919.

Gerstmann states: "High temperature has for a long time been observed to have a healing effect upon manifestations of secondary and tertiary syphilis." (Kyrle, Joseph, Stückgold, Gärtner.)

EFFECT OF HOT BATHS

In order to shed, if possible, some additional light on the therapeutic mechanism of malarial inoculation in syphilis, we carried out the following experiments on rabbits:

Rabbits were inoculated intratesticularly with an active testicular suspension from previously syphilized rabbits on one side, and into the other testicle 1 cc. of freshly drawn malarial blood containing plasmodia. Lower animals are not susceptible to malaria, and it was not expected that protection against syphilis would be exerted. It was thought desirable, however, in view of some of the hypotheses expressed, to observe what effect, if any, would be exerted by the dying plasmodia. No results were noted, and the rabbits developed syphilis in the usual time.

The next experiment was designed to determine whether elevation of the body temperature after syphilitic inoculation of rabbits would influence the development of the disease. Inoculations into the testicle were made into eight rabbits with a testicular suspension from a previously syphilized rabbit. The emulsion under the dark-field microscope showed numerous motile spirochetes. Three days after the inoculation three of the rabbits were given a hot bath at 45 C. (113 F.) for from fifteen to twenty minutes. This bath was repeated each day for eleven days. The temperature was taken under the tongue before and immediately after each bath. The temperature records are shown in table 1. It will be observed that the normal rabbit temperature is considerably above that of human beings, with variations between 100 and 103 F. After the bath the temperature rose to from 105 to 110 F. Three more rabbits were given intravenous injections of Coley's toxin fluid in daily ascending doses, beginning with $\frac{1}{15}$ of a minim and increasing to 1 minim. The rise of temperature was most irregular and averaged for all of the injections 1.5 F., whereas as a result of the baths there was an average rise of 4 F.

The other two rabbits were not treated, but were kept as controls. The controls both developed a palpable syphiloma in the testicle on the eighteenth day, and dark-field examination revealed the presence of numerous motile spirochetes.

Of the Coley fluid rabbits, two developed syphilis and one remained free.

TABLE 1.—*Effect of Elevation of Temperature of Body After Syphilitic Inoculation*

Temperature by mouth

	Rabbits Placed in Water-Bath of 45 C. from 15 to 20 Minutes						Rabbits Given Coley's Solution Intravenously in Increasing Doses								
	No. 64-J		No. 65-J		No. 66-J		No. 67-J		No. 68-J		No. 69-J			No. 70-J	No. 71-J
Date	Before	After	Before	After	Before	After	Before	3 Hours After	Before	3 Hours After	Before	After	Doses in Minims	Untreated Control	Untreated Control
January 22...	All inoculated intratesticularly														
January 25...	100.4	105.2	101.1	105.4	102.2	105	.....	.....	100	103	99.2	101	1/10		
January 26...	99.4	107.1	99.2	106.3	101.2	106.2	100.2	105.4	99.2	102	99	101.3	1/15		
January 27...	101.3	105	100.2	108	102.2	106	98.3	101.2	100.4	102.4	100	102.1	1/15		
January 28...	101.2	106	102	106.1	101.3	108.4	101.3	101.3	101.2	Not taken	101	Not taken	1/10		
January 29...	101	107.4	101	107.2	101	107	100.4	Not taken	101.1	103.1	102	104.2	1/5		
January 30...	100.2	107	101.2	105.3	101.1	107	101.2	102.1	100.2	103	102.2	103.2	1/3		
February 1..	102.2	105.4	102	110	102.1	106	101.3	104.3	101.2	103.1	100.2	104	1/2		
February 2..	100.4	106.2	101.3	107.4	102.1	105.1	101.3	104	101.1	102.2	102.4	104.2	1/2		
February 3..	100.4	107.2	101.3	105.2	102.2	105.1	101.3	101.3	102	Not taken	101.3	Not taken	1		
February 4..	Not given						101	Not taken							
February 5..	100.3	107	100.4	106	101.4	106.1	.....	.....	Testicles		Normal			Syphiloma; dark field +	Syphiloma; dark field +
February 17..	Normal		Normal		Normal		Syphiloma (?)		enlarged						
February 23..	Normal		Normal		Normal		Syphiloma (?)								
February 26..	Normal		Normal		Normal		Syphiloma; dark field +								
April 6.....	Normal; inguinal and popliteal nodes removed and transplanted into 107-108-J		Normal; inguinal and popliteal nodes removed and transplanted into 109-110-J												
May 5.....	Both normal		Both normal												
	Average Degree of Increased Temperature Produced by Treatments														
	3.7		4.2		4.0		1.4		1.6		1.5				

Of the rabbits receiving hot baths, all have remained free from evidences of syphilis up to the present time. Two of the rabbits had their lymph glands removed at the end of seventy-four days and were free from evidence of syphilis at that time. The other rabbit is free from evidence of syphilis at the end of 175 days.

To determine further and more conclusively the protection against syphilitic infection, the inguinal and popliteal lymphatic glands were removed in two of the rabbits and emulsified and transplanted into the testicles of two other rabbits. These rabbits have remained free from syphilis.

REPETITION OF HOT BATH EXPERIMENT

The result in the foregoing experiment was so astonishing that we felt the necessity of repeating it.

On March 25, seven more rabbits were inoculated with syphilis in the same manner. Three were kept as controls and four were subjected four days after the inoculation to hot baths. The untreated controls all developed syphilis in from eighteen to twenty-nine days. The four treated rabbits have remained free to the present time, a period of nearly four months. The same average rise of temperature was induced by the baths.

VARYING NUMBER OF BATHS

An attempt was then made to determine how many baths were necessary to prevent the development of syphilis. On April 22, the following experiment was carried out: Fifteen rabbits were inoculated with syphilis. Two were kept as untreated controls. They developed a syphiloma and spirochetes in less than a month. Four days after inoculation two rabbits were given a single hot bath. Rabbit 111J, whose temperature was 100.6 F. before the bath, had a rise to 105.8 F., and rabbit 112J, with the same initial temperature, had a rise to 107.8 F. Two rabbits were given two baths, two three baths, two five baths, two seven baths and two nine baths. All of the rabbits except 111J have remained free from syphilis to date, a period of forty-nine days. It will be observed that rabbit 112J had a higher rise of temperature from the single hot bath than rabbit 111J.

Since writing the foregoing, the following animals have developed evidences of syphilis: one rabbit receiving 3 baths, one receiving 5 baths and one receiving 7 baths.

The foregoing experiments appear to constitute evidence that elevation of the body temperature of the rabbit interferes with, and indeed, prevents syphilitic infection. Such an effect of the induced fever might be the result of the direct or the indirect elevation of body temperature. To determine this question the following experiment was carried out:

TABLE 2.—*Effect of Increased Temperature on Rabbits Placed in Water-Bath of 45 C. for from Fifteen to Twenty Minutes*

Temperature by mouth

Date	No. 80		No. 81		No. 84		No. 85		No. 86 Untreated Control	No. 87 Untreated Control	No. 88 Untreated Control
	Before	After	Before	After	Before	After	Before	After			
March 25	Rabbits inoculated intratesticularly										
March 29	103.2	107.1	101	105	101.3	106.3	101	105.3			
March 30	102.2	105	101.3	106	101	107	100.2	105.3			
March 31	101.4	104.4	101.2	106.4	103.4	106.3	103	106			
April 1	102.1	106.2	102	106.2	102.4	106.3	102.4	106.2			
April 2	102.2	106.3	102.4	107	103	106.1	102.4	106.1			
April 3	103.3	106	102.3	105.4	103.2	105.2	101.4	106.1			
April 5	101.4	106.2	102	106.3	102.1	106.2	101.4	106			
April 6	102.3	105.4	102.1	106.2	102.1	106.1	102	108			
April 7	103.2	107	102.2	105.4	102.3	107.3	103	108			
April 8	102.4	106.2	102.2	106.3	102.1	106.2	103	108			
April 9	102.4	108	103	108	.....	.....	.....	.....			
April 14	.....		.....		.....		.....		Normal	Testicles enlarged; Syphiloma, dark field +	Syphiloma, dark field +
April 23	.....		.....		.....		.....		Syphiloma, dark field +		
May 25	Normal		Normal		Normal		Normal				
	Average Degree of Increased Temperature Produced by Bath										
	3.7		4.3		4.1		4.1				

Cut up suspension of syphilitic testicle diluted with a little normal saline solution was heated in a test tube on a water-bath at 40 C. (104 F.) for varying periods and then injected into the testicles of rabbits.

Injections were made into two rabbits after thirty minutes' heating and into two each at the end of one and two hours, respectively. Three control rabbits were inoculated with an unheated suspension.

Examination under the dark field before each inoculation demonstrated abundant very motile spirochetes.

The controls developed a syphiloma with spirochetes within the usual period.

All of the animals receiving injections with heated suspension have remained free from syphilis up to the present date, a period of seventy-six days. Unfortunately, the two animals receiving injections with the thirty-minute heated emulsion died—one from traumatism and one from an unknown cause. The inguinal glands have been removed from four of these rabbits and inoculated into others which are now under observation.

In view of the unimpaired motility of the spirochetes after the heating described, we apprehended that the heating was not continued long enough and that syphilis would develop. We, therefore, immediately inaugurated another experiment as follows: Testicular suspension was heated at 41 C. (105.8 F.) for three, four, five and five and three-fourths hours, and each heated specimen was injected into two rabbits. It was observed by dark-field examination that *at four hours the spirochetes became less motile and that at five and five and three-fourth hours motility had almost ceased and that the spirochetes began to break up and become shorter.* None of these rabbits developed any evidence of syphilis.

COMMENT

The results of our experiments indicate that *Spirochaeta pallida* is susceptible to moderate elevation of temperature. It appears to be biologically damaged or destroyed at a temperature far lower than that necessary to devitalize vegetable microorganisms.

The strain used by us was the Nichol strain (obtained from Dr. Nichol of the United States Army), which we have employed continuously in our institute for more than five years.

In the experiments in which spirochetic testicular suspension was heated on a water-bath before inoculation, infection of the rabbit did not occur, although spirochetes unimpaired in motility were implanted in the testicle. It would appear that these organisms were so altered in virulence that they were unable to effect syphilization of the rabbit. We assume that the spirochetes later underwent disintegration. At any rate,

TABLE 3.—*Effect of Increased Temperature on Rabbits Inoculated Intratesticularly on April 22 and Bath Started on April 26* *

No. of Baths at 45 C. Given	No. of Rabbit	April 26		April 27		April 28		April 30		May 1		May 3		May 4		May 5		May 20	May 24	June 1	June 16	July 19
		Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After					
1	111 J	100.3	105.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Syphiloma +4	Discharged	.....
	112 J	100.3	107.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	Negative
2	113 J	103	107	102	105.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	Negative
	114 J	100.2	107.2	102.1	107	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	.....
3	115 J	102	106.4	102	107.1	101.3	106.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	Negative?
	116 J	103.2	106.3	101.3	106.4	99	106.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	.....
5	117 J	103.2	107.2	102.3	107.4	101.2	106	102	107.2	103.3	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	.....
	118 J	102.2	106.3	101.3	109	103.1	107.2	102.3	108	102.1	.....	.....	.....	.....	.....	.....	.....	Negative	Negative	Negative	Negative	Negative?
7	119 J	103.2	106.2	103.2	107.4	101.3	107.1	101	106	Died												
	120 J	104	107.1	102.3	109.4	102	109.1	103	106.4	103.1	107.1	102.3	107.4	.....	.....	.....	.....	Negative	Negative	Negative	Negative	Discharged
9	121 J	103	109.1	104.3	107.4	102.2	106	102.2	107.1	102.1	107.3	102.1	107.2	102.2	106.3	102	106.1	Negative	Negative	Negative	Negative	Negative
	122 J	102.2	108	102.3	106.4	103.1	106	107.3	107.4	102.2	107	104.3	107.2	102.4	106.2	102.3	106.2	Negative	Negative	Negative	Negative	Negative
Untreated	123 J	.....		.....		.....		.....		.....		.....		.....		.....		Testicle enlarged	Large syphiloma, dark field +4			
Controls	124 J	.....		.....		.....		.....		.....		.....		.....		.....		Small syphiloma	Large syphiloma, dark field +4			
	125 J	.....		.....		.....		.....		.....		.....		.....		.....		Large syphiloma, dark field +4				

* Rabbits wrapped in towels to prevent struggling. Placed in water-bath at 45 C. for from 15 to 20 minutes. Temperature kept constant with Bunsen burner.

they failed to produce any local reaction after a long period of observation, and likewise inoculation with a suspension of the inguinal glands of these rabbits into others has failed up to the present time to produce any evidences of syphilis. The question might pertinently be asked whether we possess proof that a latent form of syphilis was not induced. Our reply would be that during the last five of six years we have used this strain of spirochete in about 1,000 rabbits and have had 100 per cent of successful inoculations, with the production of a syphiloma containing spirochetes. If in the rabbits whose body temperature was raised no evidence of syphilis developed after an adequate period of observation, and if the inguinal gland inoculations were likewise negative, we believe that we are justified in stating that syphilitic infection was prevented.

As to the light which these experiments shed on the interpretation of the therapeutic mechanism of malarial inoculation in syphilis, we must maintain scientific reserve. It must be remembered that our experiments were made on syphilis in rabbits, and moreover, an infection recently induced. Whether these results could be duplicated in human beings we do not know.

In view of the fact that a rise of temperature of only 4 F. (and perhaps less) for a period of not more than twenty minutes,[12] repeated on a number of days, suffices to render the spirochete noninfective, it would appear feasible to induce the same conditions in human subjects without risk.

We have given some patients with neurosyphilis hot baths and have observed a rise in temperature to 102 F. This work is still in progress, and it is too early to say anything about therapeutic results. The interesting query arises whether extremely hot baths might be effective as a prophylactic measure after exposure.

We have in course of progress some interesting experiments supplementing those referred to above. This report is presented as a preliminary communication.

CONCLUSIONS

1. It is possible to prevent syphilitic infection in rabbits after testicular implantation of the specific virus if the rabbits are given a series of baths at a temperature of 45 C. (113 F.) within three to four days after inoculation. An average rise of temperature of 4 F. is induced.

2. How many baths are necessary to sterilize the infection is not yet definitely known, but at the date of this communication it would appear that about nine are necessary.

---

12. After the rabbits are removed from the bath, their temperatures rapidly drop to normal and then several degrees below normal.

TABLE 4.—*Effect of Elevation of Temperature on Development of Syphilis*

Number of Rabbits	Rabbits Inoculated Intratesticularly With a Suspension of Spirochaeta pallida heated at 40 C. on Water-Bath for	Dark-Field Examination After Exposing to Heat and Just Before Inoculations	April 14	April 18	April 22	May 17	May 22
89 J	30 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	Accidental death		
90 J	30 minutes	Very motile	No clinical evidence of syphilis	Died			
91 J	60 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	Inguinal and popliteal gland removed, ground and injected into testicle 140 and 141
92 J	60 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	
93 J	90 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	Inguinal and popliteal gland removed, ground and injected into testicle 142 and 143
94 J	90 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	
95 J	120 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	
96 J	120 minutes	Very motile	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	No clinical evidence of syphilis	
87 J	Controls inoculated with unheated suspension		Testicles enlarged	Large syphiloma, dark field +4 very motile			
86 J			Testicles enlarged	Testicles enlarged and hard	Large syphiloma, dark field +2 quite motile		
88 J			Large syphiloma, dark field +4 very motile				

Results of Lymph Gland Transplants

140	Inoculated with lymph gland from Rabbit 91 J	Under observation	142	Inoculated with lymph gland from Rabbit 93 J	Under observation
141	Inoculated with lymph gland from Rabbit 91 J	Under observation	143	Inoculated with lymph gland from Rabbit 93 J	Under observation

3. Infection can also be prevented by heating the spirochetic suspension on a water-bath at 40 C. (104 F.) for one hour before inoculation.

4. It would appear that the thermal death point outside the body of *Spirochaeta pallida* is about 41 C. (105.8 F.) with an exposure of approximately six hours.

5. While these experiments indicate that *Spirochaeta pallida* in the rabbit cannot withstand high fever, it is not definitely proved that this applies to human syphilis.

6. Whether these experiments shed any illumination on the mode of action of malaria in syphilis can only be determined by further investigation.

DISCUSSION

Dr. Paul A. O'Leary, Rochester, Minn.: In endeavoring to attribute the beneficial effects of malaria to some specific factor, we have been impressed with the value of the fever itself rather than with the presence of the plasmodium vivax. This is substantiated by clinical observations, and pointed out in the report of last year and confirmed by further observations this past year. The group of patients who had an average temperature of 105 F. or thereabouts throughout the course of the chills showed the most marked clinical remission of the paresis. They also had a leukocytosis, which is contrary to the usual teaching that patients with malaria have a leukopenia. On the other hand, those who have obtained the least benefit have had a leukopenia throughout the malaria course.

The continued therapeutic use of malaria fever in the resistant forms of neurosyphilis is warranted if we accept the reports of those who have had an extensive experience with the method. We have learned, just as we did with arsphenamine, that a certain group of patients derive more benefit than others. Our efforts should be directed toward determining the criteria by which we will know those who are to be benefited; in other words, learn the types of disease most easily influenced by those nonspecific measures. The second problem is to ferret out the facts that produce the benefits. This study of Dr. Schamberg's is the first work of this sort reported in this country, and I trust that his further efforts with the aid of his collaborators will explain the mechanism of malaria fever therapy.

Dr. Fred D. Weidman, Philadelphia: This work is another link connecting disease and the employment of heat therapeutically. Last night I brought out its effect on fungi, and now we have its effect on bacteria or protozoa, as you will. There is no telling how far this work may be extended, because in almost any of our infectious dermatoses we can cultivate organisms. All of this is a recent development, although the principle was brought to my attention as far back as 1910 in the undergraduate lectures in pathology by Dr. Allen J. Smith. Thus, in connection with the acute infectious fevers, he taught that at the height of the hyperpyrexia great numbers of animal parasites might be expelled from the organism—ascaris and oxyuris could be expelled by the anus and mouth in malaria, diphtheria, etc. Since that time I have had one or two forceful illustrations of this at the Philadelphia Zoological Garden. We keep a record of certain infested animals (diagnosis by feces examination), and those that are infested receive treatment. In several animals we gave intensive

anthelmintic treatment without success and we gave up the attempt as hopeless and discontinued treatment, and yet when they came to necropsy we were unable to find the parasite in the intestinal tract. The keepers explain this in telling us that animals will frequently pass large quantities of worms in the death agony; i. e., conditions in the economy become intolerable for the parasites in connection with the hyperpyrexia or other untoward febrile effects. Rivas' treatment of hookworm and amebiasis by hot water lavage (duodenal tube and enema) is along these same lines.

Dr. Herman Goldenberg, New York City: I should like to know whether there is any analogy between these experiments and the statement made by Kolle that he was unable to inoculate an animal with syphilis as long as any bismuth was present in a deposit of the animal after intramuscular injection. When this deposit was removed he could successfully inoculate it with syphilis.

Dr. Jay Frank Schamberg, Philadelphia: As I understand the question of Dr. Goldenberg, he desires to know whether we have observed in our experimental work results comparable to those obtained by Professor Kolle. I assume that Dr. Goldenberg has reference to the injection of insoluble bismuth into the ears of rabbits, the same restraining the development of evidence of syphilis during its presence there. After the deposit was excised, such evidences presented themselves. We have not carried out any work of this character. The results of our experiments have been most decisive. We frequently find in laboratory research on cancer, tuberculosis and other infections that successive experiments do not yield the same results as the original ones. Variations in results are often found which are difficult to explain. In this work on the effect of elevation of the body temperature on syphilitic infection in rabbits the results have been concordant and seem to us conclusive. They demonstrate that in rabbit syphilis an infection can be prevented by artificial elevation of the body temperature to a relatively moderate degree. I believe that the infection has been prevented completely in these rabbits; not only is there an absence of syphiloma and spirochetes, but inoculation of a suspension of the inguinal gland has later proved negative. It must be remembered, of course, that the rabbit normally has a temperature of 100 to 103 F., and that therefore with the fever induced the resultant temperature is higher than would be produced in human subjects by baths or similar treatments. We have no conclusive evidence that hot baths would be valuable in the prevention of syphilis in the human subject, although a trial of this method as a means of prophylaxis would be interesting.

In connection with the malarial treatment of syphilis, I recall an expression of Shakespeare in "Romeo and Juliet" which reads: "Take thou some new infection to the eye and the rank poison of the old will die."

GRANULOSIS RUBRA NASI (JADASSOHN)

REPORT OF A CASE *

B. BARKER BEESON, M.D.

Professor and Director of the Division of Dermatology and Syphilology, Loyola University School of Medicine

CHICAGO

Synonyms for granulosis rubra nasi are: a peculiar form of acne with changes in the sweat glands (Luithlen); perisyringitis chronica nasi (Jadassohn); dermatitis micropapulosa or granularis erythematosa hyperidrotica chronica nasi (infantum) (Jadassohn); granulosis rubra nasi e hyperidrosi or granulosis rubra nasi cum hyperidrosi (Walther Pick); a peculiar inflammatory dermatitis of the nose in young persons with sweating (Herrmann); false acne rosacea in children (Audry); a form of chronic erythema of the nose in children (Dubreuilh).

The lack of a comprehensive review of this disorder in American literature coupled with its apparent rarity here seem sufficient reasons to justify a review of the subject plus the study of a personal case.

An accurate composite picture of granulosis rubra nasi may be obtained from the writings of Luithlen,[1] Jadassohn,[2] Hallopeau,[3] Mirolubow,[4] MacLeod,[5] and Caesar Ducrey.[6] Mirolubow's thesis, which reviews thoroughly the literature up to 1906, fifty-eight cases in all, twenty-two of them Jadassohn's, is the most exhaustive study of this affection.

---

* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* From the Dermatological Clinic and Department of Pathology and Bacteriology, Loyola University School of Medicine.

1. Luithlen: Ueber eine eigentümliche Form von Acne mit Schweissdrüsenveränderungen, Kaposi Festschrift, 1900, pp. 707-719.

2. Jadassohn: Ueber eine eigenartige Erkrankung der Nasenhaut bei Kindern ("Granulosis rubra nasi"), Arch. f. Dermat. u. Syph. **58**:145-158, 1901.

3. Hallopeau: Contribution a l'étude clinique, pathogenique et nosologique de la granulosis rubra nasi, J. d. mal. cutan. et syph. **18**:241-247, 1906.

4. Mirolubow, Elizabeth: Ueber granulosis rubra nasi und ueber Miliaria crystallina und alba, Inaugural Dissertation, Bern, 1906.

5. MacLeod: A Case of Granulosis Rubra Nasi (Jadassohn), Brit. J. Dermat. **15**:197-206, 1903; Granulosis Rubra Nasi (Jadassohn), a Further Contribution, ibid. **18**:342-353, 1906.

6. Ducrey, Caesar: Granulosis rubra nasi, Gior. ital. d. mal. ven **63**:636-645, 1922.

LITERATURE ON THIS CONDITION

Foreign Cases.—Luithlen, in 1900, first described the condition and emphasized its resemblance to acne rosacea, a fact later mentioned by Audry,[7] Hallopeau, Gaucher, di Lorenzo[8] and Montesano.[9] The next year Jadassohn reported seven cases, and gave the disorder its present name. He stated that he had first encountered it at Neisser's clinic in 1890. Preceding these two papers, Pringle[10] had shown two cases before the London Dermatological Society in 1894, with the provisional diagnosis of hydrocystoma. As MacLeod has said, they were undoubted examples of granulosis rubra nasi.

Subsequent observations are due to Walther Pick,[11] Herrmann,[12] Saalfeld,[13] Meachen,[14] Bernhardt,[15] van den Hoops,[16] Lebet,[17] Dubreuilh,[18] Pinkus,[19] Bäumer,[20] Sée,[21] Allan Jamieson,[22] Malherbe,[23]

---

7. Audry: Granulosis rubra nasi, fausse acne rosée des enfants, Ann. de dermat. et syph. sér. 4, **4**:844-845, 1903.

8. Di Lorenzo, Edoardo: Sulla granulosis rubra nasi, Atti r. clin. oto-laring., Universitá di Roma **17**:115-142, 1919.

9. Montesano: Granulosis rubra nasi, Jadassohnii (falsa acne rosacea dell' infanzia dell' Audry?), Atti. r. clin. oto-rino-laring., Universitá di Roma **10**:57-66, 1912.

10. Pringle: Cases for Diagnosis, Dermat. Soc., Lond., Feb. 14, 1894; Ref. Brit. J. Dermat. **19**:445, 1907.

11. Pick, Walther: Ueber Granulosis rubra nasi (Jadassohn), Arch. f. Dermat. u. Syph. **62**:105-114, 1902; Wien. Dermat. Gesellsch., May 13, 1908; Arch. f. Dermat. u. Syph. **96**:90, 1909.

12. Herrmann: Eine eigentümliche mit Hyperidrosis einhergehende entzündliche Dermatose an der Nase jügendlicher Individuen, Arch. f. Dermat. u. Syph. **60**:77-90, 1902.

13. Saalfeld: Granulosis rubra nasi, Berlin. Dermat. Gesellsch., Dec. 2, 1902; Monatsh. f. prakt. Dermat. **36**:28, 1903.

14. Meachen: A Case of Local Hyperidrosis, Dermat. Soc. Great Britain & Ireland, Jan. 28, 1903; Brit. J. Dermat. **15**:104, 1903.

15. Bernhardt, quoted by Mirolubow (footnote 4).

16. Van den Hoops, quoted by Gordon: J. Michigan M. Soc. **23**:132, 1923.

17. Lebet: Contribution a l'étude de l'hidrocystome (avec une note sur la granulosis rubra nasi), Ann. de dermat. et syph. ser. 4, **4**:273-282, 1903.

18. Dubreuilh: Hyperhidrose et hidrocystome du nez chez un enfant, Bull. Soc. franç. de dermat et syph. **15**:375, 1904.

19. Pinkus: Ueber die Beziehung des Hidrocystoms zur Granulosis rubra nasi, Dermat. Ztschr. **11**:646-647, 1904.

20. Bäumer: Ein Beitrag zur Histologie der Granulosis rubra nasi, Dermat. Ztschr. **11**:646-647, 1904.

21. Sée, Marcel: Granulosis rubra nasi, Bull. Soc. franç. de dermat. et syph. **15**:349, 1904.

22. Jamieson, Allan: A Case of Granulosis rubra nasi, Tr. Med.-Chir. Soc. Edinb. n. s. **24**:225, 1905.

23. Malherbe: Granulosis rubra nasi, J. mal. cutan. **17**:96-100, 1905.

Graham Little,[24] Colcott Fox,[25] Schwab,[26] Adamson,[27] Brocq,[28] Reinsberg,[29] Spiegler,[30] Sandman,[31] Darier and Civatte,[32] Max Joseph,[33] Jeanselme,[34] LaMensa,[35] Landau,[36] Ehrmann,[37] Bräudle,[38] Greco,[39] Haslund,[40] Gougerot,[41] Williams,[42] Barber,[43] Rille,[44] Brock,[45] Ritter,[46]

---

24. Little, Graham: A Case of Granulosis Rubra Nasi, Dermat. Soc. Lond., May 9, 1906; Brit. J. Dermat. **18**:218, 1906.

25. Fox, Colcott: Clinical Notes, Brit. J. Dermat. **18**:320-321, 1906.

26. Schwab: Arch. f. Dermat. u. Syph. **79**:472, 1906.

27. Adamson: A Case of Granulosis Rubra Nasi, Dermat. Soc. Lond., Feb. 13, 1907; Brit. J. Dermat. **19**:71, 1907.

28. Brocq: Traité élémentaire de dermatologie pratique, Paris, Doin, **2**: 409, 1907.

29. Reinsberg: Granulosis rubra nasi, Jadássohn, Čas. lék. česk. **46**:787-791, 1907.

30. Spiegler: Wien. Dermat. Gesellsch., May 13, 1908; Arch. f. Dermat. u. Syph. **96**:90, 1909.

31. Sandman: Stockholm. Dermat. Ges., April 22, 1909; Arch. f. Dermat. u. Syph. **97**:345, 1909.

32. Darier and Civatte: Granulosis rubra nasi, Bull. Soc. franç. de dermat. et syph. **21**:65-68, 1910.

33. Joseph, Max: Lehrbuch der Hautkrankheiten, ed. 7, Leipzig, Thiene, 1910, p. 134.

34. Jeanselme: Traitement de la granulosis rubra nasi par la radiothérapie, Bull. Soc. franç. de dermat. et syph. **21**:65-68, 1910.

35. La Mensa: Granulosis rubra nasi, Contributo alla casistica ed alla patologia, Gaz. internaz. di med., 1911, pp. 1043-1047.

36. Landau: Wien. Dermat. Gesellsch., Jan. 26, 1910; Arch. f. Dermat. u. Syph. **101**:372, 1910; **102**:126, 1910.

37. Ehrmann: Atlas der Hautkrankheiten und der Syphilide, G. Fischer, Wien, 1912, p. 26.

38. Bräudle: Die Behandlung der Granulosis rubra nasi mit Roentgenstrahlen, Dermat. Ztschr. **18**:965-969, 1911.

39. Greco: Sociedad Dermat. Argentina, Sept. 18, 1912; Rev. dermat., Buenos Aires **11**:253, 1914.

40. Haslund, Paul: Granulosis Rubra Nasi Treated with Carbonic Acid, Hospitalstid. **7**:1295, 1914.

41. Gougerot: Granulosis rubra nasi et tuberculose, Bull. Soc. franç. de dermat. et syph. **25**:344-346, 1914.

42. Williams, A. Winkelried: A Case of Granulosis Ruba Nasi, Proc. Roy. Soc. Med., Dermat. Sect., Oct. 21, 1915; Brit. J. Dermat. **27**:430, 1915.

43. Barber: Two Cases of Granulosis Ruba Nasi in Boys, Proc. Roy. Soc. Med., Dermat. Sect. **40**:1918-1919.

44. Rille: Granulosis rubra nasi, 2 Tag Mitteldeutsch. Dermatolog, Leipzig, March 20, 1921; Zentralbl. f. Haut. u. Geschlechtskrankh. **1-2**:340, 1921.

45. Brock: Dermat. Wchnschr. **74**:334, 1922.

46. Ritter, Hans: Zur Aetiologie der Granulosis rubra nasi, Dermat. Wchnschr. **73**:366-370, 1921.

Trost,[47] Fuhs,[48] Bruusgaard,[49] Lipschütz,[50] Boas,[51] Randak,[52] Sterling,[53] Porias,[54] Pasini,[55] Artom,[56] Scamazzoni,[57] Kaufmann-Wolf,[58] Urbach,[59] Hugel,[60] Spillmann, Pelthier and Watrin,[61] Freund,[62] Wirz,[63] Funfack,[64] Andruszewski,[65] Kleeberg,[66] Pick,[67] Spitzer,[68] Böhm,[69] Castellani [70] and

47. Trost: Vier Fälle von Granulosis rubra nasi, Schles. Dermat. Gesellsch., Breslau, Jan. 28, 1922; Zentralbl. f. Haut. u. Geschlechtskrankh. **3-4**:325, 1921-1922.

48. Fuhs: Wien. Dermat. Gesellsch., March 23, 1922; Dermat. Wchnschr. **75**:746, 1922.

49. Bruusgaard: Granulosis rubra nasi, Tidsskr. f. d. norske Lægefor. **30**: 389, 1919.

50. Lipschütz: Wien. Dermat. Gesellsch., June 22, 1922; Dermat. Wchnschr. **75**:1246, 1922.

51. Boas: Granulosis rubra nasi, Verhandl. d. Dansk. Dermat. Gesellsch., 1922-1923; Hospitalstid. **66**:41, 1923.

52. Randak: Wien. Dermat. Gesellsch., May 18, 1922; Dermat. Wchnschr. **75**:1161, 1922.

53. Sterling: Granulosis rubra nasi bei 29 jähriger Patientin, Warschauer Dermat. Gesellsch., March 8, 1923; Zentralbl. f. Haut. u. Geschlechtskrankh. **13**:242, 1923.

54. Porias: Wien. Dermat. Gesellsch., Jan. 27, 1921; Zentralbl. f. Haut u. Geschlechtskrankh. **1-2**:20, 1921.

55. Pasini, quoted by Ducrey (footnote 6).

56. Artom: Granulosis rubra nasi, Gior. ital. d. mal. ven. **64**:1281-1292, 1923.

57. Scamazzoni: Della granulosis rubra nasi. Osservazioni cliniche ed istologiche, Gior. ital. d. mal. ven. **64**:1293-1307, 1923.

58. Kaufmann-Wolf: Kurze Notiz ueber das Vorkommen zysticher Erweiterungen der Schweissdrusenazini bei der granulosis rubra nasi (Jadassohn), Dermat. Wchnschr. **79**:31, 1924.

59. Urbach: Granulosis rubra nasi und funktionelle Hyperidrose der Nase beim Brüder, Wien. Dermat. Gesellsch., May 3, 1923; Dermat. Wchnschr. **78**: 56, 1924.

60. Hugel: Un cas de granulosis rubra nasi, Réun. dermat. de Strasbourg, Séance du 13 Janvier, 1924; Bull. Soc. franç. de dermat. et syph. R. S. **31**, 1924.

61. Spillmann, Pelthier and Watrin: Un cas de granulosis rubra nasi, Réun. dermat. de Nancy, séance du 3 Juin, 1924; Bull. Soc. franç. de dermat. et syph. R. N. **31**:27, 1924.

62. Freund: Wien. Dermat. Gesellsch., Jan. 27, 1921; Zentralbl. f. Haut. u. Geschlechtskrankh. **1-2**:20, 1921.

63. Wirz: München. dermat. Gesellsch., May 19, 1924; Zentralbl. f. Haut. u. Geschlechtskrankh. **15**:22, 1924-1925.

64. Funfack: Versam. Dresdener. Dermatolog. u. Urol., Nov. 5, 1924; Zentralbl. f. Haut. u. Geschelchtskrankh. **15**:22, 1924-1925.

65. Andruszewski: Lemberg. Dermat. Gesellsch., Dec. 18, 1924; Zentralbl. f. Haut u. Geschlechtskrankh. **16**:525, 1925.

66. Kleeberg: Berl. Dermat. Gesellsch., May 12, 1925; Zentralbl. f. Haut u. Geschlechtskrankh. **17**:621, 1925.

67. Pick, E.: Deutsch. dermat. Gesellsch. in der Tcheckoslowakischer Republik, May 24, 1925; Zentralbl. f. Haut. u. Geschlechtskrankh. **17**:624, 1925.

68. Spitzer, R.: Schlesische Dermat. Gesellsch., June 20, 1925; Zentralbl. f. Haut u. Geschlechtskrankh. **11**:755, 1925.

69. Böhm: Schlesische Dermat. Gesellsch., June 20, 1925; Zentralbl. f. Haut u. Geschlechtskrankh. **11**:750, 1925.

70. Castellani: Personal communication.

Ben.[71] In discussing certain of these cases, Balzer, Halle, Belot, Herxheimer and Kuznitsky have also recorded instances of this disorder. Méneau [72] and Ricard [73] have reviewed the subject without adding any cases.

American Cases.—Ormsby,[74] Anthony,[75] Oulman,[76] Parounagian,[77] Trimble,[78] Lane,[79] Sutton,[80] Gordon,[81] Levin [82] and Beeson [83] have reported cases of granulosis rubra nasi in this country. Bechet, in discussing Levin's case, said he had seen a number. Cowie [84] has studied Gordon's patient at length.

SYMPTOMATOLOGY

The characteristic symptoms are hyperhidrosis, diffuse redness and tiny reddish papules. Hydrocystoma is a rare fourth symptom. These lesions are usually confined to the nose, particularly over its cartilaginous portion.

A more or less continuous hyperhidrosis is almost constant. The upper lip, cheeks, forehead and even the entire face may be bathed in sweat. The palms and soles are frequently the seat of profuse sweating. The sweat beads may be independent of the papules (MacLeod). The

---

71. Ben: Granulosis rubra nasi, Verhandl. Rheinisch-Westfälischer Dermatolog. Gesellsch., Nov. 8, 1925; Zentralbl. f. Haut. u. Geschlechtskrankh. **19**:17, 1926.

72. Méneau, J.: Granulosis rubra nasi, J. mal. cutan. et syph. ser. 6 **20**: 894-904, 1909.

73. Ricard: Granulosis rubra nasi, Thèse de Toulouse, 1903-1904.

74. Ormsby: A Case of Granulosis Rubra Nasi, Chicago Dermat. Soc., 1905; J. Cutan. Dis. **23**:183, 1905.

75. Anthony: The Acrodermatoses of Scrofula, Hyperhidrosis, and Granulosis Rubra Nasi, J. Cutan. Dis. **25**:241-246, 1907.

76. Oulman: Granulosis Rubra Nasi with General Hyperidrosis, Manhattan Dermat. Soc., May 3, 1907, J. Cutan. Dis. **26**:181, 1908.

77. Parounagian: Granulosis Rubra Nasi, Manhattan Dermat. Soc., June 12, 1909; J. Cutan. Dis. **27**:186, 1909.

78. Trimble: Clinical Sessions 39th Annual Meeting of the American Dermatological Association, New York, 1915; J. Cutan. Dis. **34**:394, 1916.

79. Lane, J. E.: Photograph of Case of Granulosis Rubra Nasi, in Sutton: Diseases of the Skin, St. Louis, The C. V. Mosby Co., 1923.

80. Sutton: Diseases of the Skin, ed. 5, St. Louis, The C. V. Mosby Co., 1923.

81. Gordon, William: Report of a Case of Granuloma Rubra Nasae, J. Michigan M. Soc. **23**:132, 1923.

82. Levin: Granulosis Rubra Nasi, New York Acad. Med., Sect. Dermat., May 5, 1925, Arch. Dermat. & Syph. **12**:898, 1925.

83. Beeson: Granulosis Rubra Nasi, Chicago Dermat. Soc., June 17, 1926; Arch. Dermat. & Syph. **13**:257, 1926.

84. Cowie: Granulosis Rubra Nasi. Tuberculosis Cutis, Med. Clin, N. Amer. n. s. 6, 1923, pp. 1301-1306.

sweat may be alkaline over the nose. Mirolubow found it also acid in certain spots on that organ. Ducrey's two cases showed no hyperhidrosis.

A diffuse, often poorly defined redness of the nose is almost always present. It varies from a bright to a dark shade and disappears on diascopic pressure as does the color of the papules. Telangiectasia is not usually prominent, but Jadassohn found it much accentuated on two occasions.

Pinpoint to pinhead-sized papules of a bright or dark reddish hue are generally present. Rarely they appear on the cheeks, chin, upper lip and even the ears. They are round, closely set, stand out from the surrounding skin and are soft on palpation. They affect no special grouping, nor do they become confluent. Pores were not present at their apexes nor were they umbilicated in MacLeod's cases. Pringle found some papules umbilicated, and he compared certain of them to the heads of glass-beaded pins. Bruusgaard observed drops of sweat exuding from umbilicated papules in one case. Jadassohn and Hallopeau have seen tiny pustules.

The affected skin is granular, shiny and appears to be slightly atrophic (Jadassohn). Scaling and scarring are conspicuously absent.

These patients often exhibit poor peripheral circulation with cold cyanotic hands and feet. The nose usually feels cold, and chilblains are not uncommon.

Hydrocystomas appear as tense, clear, round or ovoid, pinhead to pea-sized vesicles. At times they appear to be set in the skin, and show little or no elevation. The larger ones have a bluish or steel-gray tint, particularly about their margins. These vesicles have been found seated on the papules, scattered among them or located elsewhere on the nose. Only a few occur in a given case of granulosis rubra nasi. When punctured, a drop of clear, usually acid fluid is obtained. This may be alkaline (Mirolubow).

Abortive Cases.—Jadassohn has described an abortive form of this disorder, which is characterized by hyperhidrosis plus a permanent redness of the nose without papules. The cases of Meachen and Darier and Civatte belong in this class. Balzer believes that these are not rare. Dubreuilh placed his case of hyperhidrosis and hydrocystoma among these abortive types.

Subjective Symptoms.—These are usually unimportant. At times a slight burning, itching or feeling of cold is noted. Parounagian's patient complained of intense burning over the nose.

ETIOLOGY

In fifty-eight cases Mirolubow found thirty-one females and twenty-seven males. Most of the American cases affected males. This is

almost always a disorder of infancy and early childhood. Artom's patient was 27 months old. Spitzer's case began when the patient was 19 years of age. Halle states that it is not rare in Paris among infants of 2 to 3 years. At times a familial tendency is noted, Hallopeau seeing three brothers affected. Jadassohn observed no seasonal predilection. Darier and Civatte and Max Joseph found that their patients were worse in winter while others have seen a summer exacerbation.

Di Lorenzo and Montesano believe this to be a special kind of acne rosacea.

Brocq, Jadassohn, Herrmann and others have almost always encountered granulosis rubra nasi in delicate scrofulous children with poor peripheral circulation. Colcott Fox, Spillmann, Bruusgaard and Scamazzoni have seen it in healthy children.

Hyperhidrosis appears to play an important rôle in the great majority of cases, but whether the quantity or quality of the sweat is the more important factor has not as yet been determined (Mirolubow).

In his recent textbook, MacLeod [85] states that the pathogenesis of this disorder is still sub judice, that it is a matter for dispute whether the blood vessel congestion precedes the hyperhidrosis or whether sweating is the initial disturbance.

Hallopeau believed it to be due to a reflex exciting action of the sweat glands on the vasodilators, resulting in an active hyperemia of the sweat glomeruli and a passive hyperemia of the adjacent parts. Bruusgaard also shares this belief.

Lipschütz studied a case associated with an extremely dilated and tortuous temporal vein. On laughing, the patient could produce a distinct right-sided exophthalmos lasting thirty seconds. The fundi were normal. Lipschütz suggests the possible influence of such a vascular anomaly.

Ritter has recorded a case in which the patient first presented an erythema induratum of Bazin on the lower right leg. About a year later, papulonecrotic tuberculids appeared on both arms, and almost simultaneously granulosis rubra nasi came on the nose. Roentgen-ray examination of the thorax did not reveal any signs of tuberculosis.

Walther Pick has reported the coincidence of lichen scrofulosorum and granulosis rubra nasi.

Wile found tuberculosis cutis in Gordon's case.

Of Gougerot's cases of granulosis rubra nasi, one had lupus vulgaris and the other lupus pernio.

Artom's patient presented tuberculous gumma of the skin. Roentgen-ray examination of the chest showed an enlargement of the mediastinal glands and also of the glands of the hilus of the left lung. The

85. MacLeod: Diseases of the Skin, New York, Paul B. Hoeber, 1921.

Pirquet reaction was strongly positive. Artom believes with Ritter that this is a tuberculid.

The tuberculin test was positive in seven of the eleven cases seen by Trost. None of Jadassohn's cases responded to this test. Pusey [86] regards this as an atypical hydrocystoma. Ormsby [87] believes that vascular disturbances are probably primary etiologic elements.

Sutton and Knowles [88] are of the opinion that hyperhidrosis is apparently a predisposing factor. Highman [89] believes that this affection is closely related to hydrocystoma, and that it probably results from a congenital anomaly of the vasomotor system causing sweating and cystic changes in the coils.

In Böhm's patients, two brothers, one presented a positive tuberculin test and the other an abortive granulosis rubra nasi with a negative tuberculin reaction. One of Mirolubow's patients also showed a tuberculosis fungo-verrucosa. Bilateral tuberculous enlargement of the inferior turbinates has been noted by Jadassohn.

La Mensa believed that indigestion was causative in one of his cases. Scamazzoni suggests the possibility of a toxic endocrine factor. Anthony believed that in his case a chronic pyogenic nasal infection was causative. Ducrey believes that a chronic inflammatory process due to various causes is the factor. Frostbite preceded cases seen by Malherbe and Bäumer.

HISTOPATHOLOGY

Jadassohn found the epidermis to be normal as a whole, the characteristic changes being in the corium. The blood vessels and lymphatics of the upper and middle portions were widely dilated and surrounded by an infiltrate composed largely of mononuclear leukocytes, large cells with pale nuclei and a few scattered plasma cells. The sweat glands were normal. The sebaceous glands and hair follicles showed no noteworthy changes. The sweat ducts frequently exhibited considerable dilation and also a flattened epithelium. This dilation may be found anywhere, even in the epidermal portion of the duct. The lumen of the duct may contain a finely granular débris. The infiltrate about these ducts consists chiefly of mononuclear leukocytes, cells with vesicular nuclei and scattered plasma cells. The collagen and elastic tissue appeared normal. No caseation or degeneration en masse was found. Typical giant cells were not observed. In Jadassohn's opinion these changes suggest a chronic infectious process.

86. Pusey, W. A.: The Principles and Practice of Dermatology, ed. 4, New York, D. Appleton and Company, 1924.

87. Ormsby: Diseases of the Skin, ed. 2, Philadelphia, Lea & Febiger, 1921.

88. Knowles: Diseases of the Skin, ed. 2, Philadelphia, Lea & Febiger, 1923.

89. Highman: Dermatology, New York, The Macmillan Company, 1921.

MacLeod found dilation of the blood vessels of the papillae and subpapillary layer, but the vessel walls were unchanged. An infiltrate of leukocytes, connective tissue cells, a few mast cells and an occasional plasma cell surrounded these vessels. The principal changes were in the sweat apparatus. The sweat coils were irregularly widened and contained a finely granular débris. In places the walls of these coils were considerably thickened. The sweat ducts were not implicated to the same extent, and showed little or no change. Around the sweat coils and ducts there were foci of cellular infiltration similar to those about the blood vessels.

Bäumer found decided dilation of the sweat ducts, even cystlike at times. The ducts were surrounded by an infiltrate composed largely of plasma cells. Scamazzoni noted cystlike widening of the sweat coils. Luithlen described dilation of the sweat glands and ducts. Kaufmann-Wolf also observed cysts of the sweat ducts. In her opinion this should be a constant finding in sufficiently deep biopsies.

Lebet found a number of sweat duct cysts in his sections. These findings corroborate those of Jarisch,[90] who ascertained that in hydrocystoma the cyst has no outlet, the external portion of the duct having disappeared, while that portion which connects it with the sweat gland is preserved. In this way retention cysts are produced which get rid of their contents by resorption or evaporation and are again filled with sweat, but this does not produce an atrophy of the sweat glands. Lebet concludes that hydrocystoma may be produced thus in granulosis rubra nasi by a transitory or chronic inflammatory process located about the sweat ducts.

Herrmann found no connection histologically between the lesions and the sweat and sebaceous glands. In sections from one case Ducrey did not find sweat gland or duct changes but instead acanthosis, spongiosis and edema of the collagen fibers.

DIAGNOSIS

A characteristic case would appear to offer little difficulty. The abortive types could cause confusion. Acne rosacea, lupus vulgaris, lupus erythematodes, chronic eczema and acne vulgaris are the chief disorders requiring differentiation.

Acne rosacea appears later, has pustular lesions, does not necessarily present hyperhidrosis and is not limited to the nose. Lupus vulgaris has characteristic apple-jelly nodules and causes destruction with crusting and scarring. Lupus erythematodes is characterized by atrophic scarring and advancing border. It may form large patches, has adherent tacklike scales and can cause permanent alopecia and mucous membrane

90. Jarisch-Matzenauer: Die Hautkrankheiten, ed. 2, Vienna, Holder, 1908.

changes. Chronic eczema has a preceding acute vesicular stage, is not limited to the nose, is not necessarily found with hyperhidrosis, and its histopathology largely affects the epidermis. Acne vulgaris is prone to suppuration, scarring and comedo formation, with an oily skin and prominent pilosebaceous orifices, and it is more widely distributed.

TREATMENT

Treatment with lotions, salves and pastes has been unsatisfactory. Jeanselme, Hugel, Brock, Pasini, Bräudle and Ben reported good results with roentgen-ray therapy. Spillman, Haslund, Graham Little and Bruusgaard have successfully employed carbon dioxide snow. Greco found the quartz lamp valueless in his case. Malherbe recommends linear scarification. Gougerot reported that the Finsen lamp had almost no effect on granulosis rubra nasi, while it cured an associated lupus vulgaris.

REPORT OF CASE

C. J., aged 20, unmarried, chauffeur, born in Palermo, was seen at Mercy Clinic, Chicago. He came because of a redness of the nose which had been present for eight years. Aside from this, his nose was always very sweaty. He had always enjoyed good health, and had worked hard since childhood. There was no family history of a similar trouble, or of tuberculosis.

On examination no significant visceral lesions were found. The systolic blood pressure was 126 and the diastolic pressure was 80. The tonsils were submerged and cryptic, and pus was expressed from the left one. The left inferior turbinate was much enlarged, and the nasal septum showed considerable deviation to the left. In both axillae and groins numerous small, firm, freely movable, indolent lymphatic glands were found.

Blood examination showed: hemoglobin (Dare), 85 per cent; erythrocytes, 4,900,000; leukocytes, 9,000; differential count; polymorphonuclear neutrophils, 47; lymphocytes, 45; large mononuclears, 5; eosinophils, 2, and polymorphonuclear basophils, 1. The blood Wassermann reaction was negative.

Urinalysis showed a specific gravity of 1,020, an acid reaction, a faint trace of albumin, a few white cells and many epithelial cells, but no sugar or red blood cells.

Fluoroscopic examination of the chest showed considerable enlargement of the left auricle and the apex of the heart, both anteroposteriorly and laterally. The apexes were rather dark. The hilus markings were fairly definite. The diaphragm was smooth and moved freely.

A roentgenogram showed considerable fibrosis involving the pulmonary vessels on both sides. There was a shadow, suggestive of infiltration involving the apexes of both lungs. The cardiac shadow was about normal in size except in the region of the left auricle, where there was a slight enlargement. The aortic arch was normal in size.

A roentgenogram of the skull showed some haziness involving the right antrum and the right ethmoid sinus. The left nasal cavity seemed to be clouded. The sphenoidal sinuses were slightly hazy.

Skin Lesions.—The nose was reddened from its tip up to about 1 inch below the glabella. This coloration extended laterally on both sides onto the malar

bones. It was rather sharply defined and was due not only to a diffuse redness but also to numerous variously-sized telangiectatic blood vessels, which formed a closely interwoven network.

A large number of small papules were present over the cartilaginous portion of the nose (fig. 1). They varied in size from that of a small to that of a large pinhead, were pale red, round, flat and soft. They were closely grouped but showed

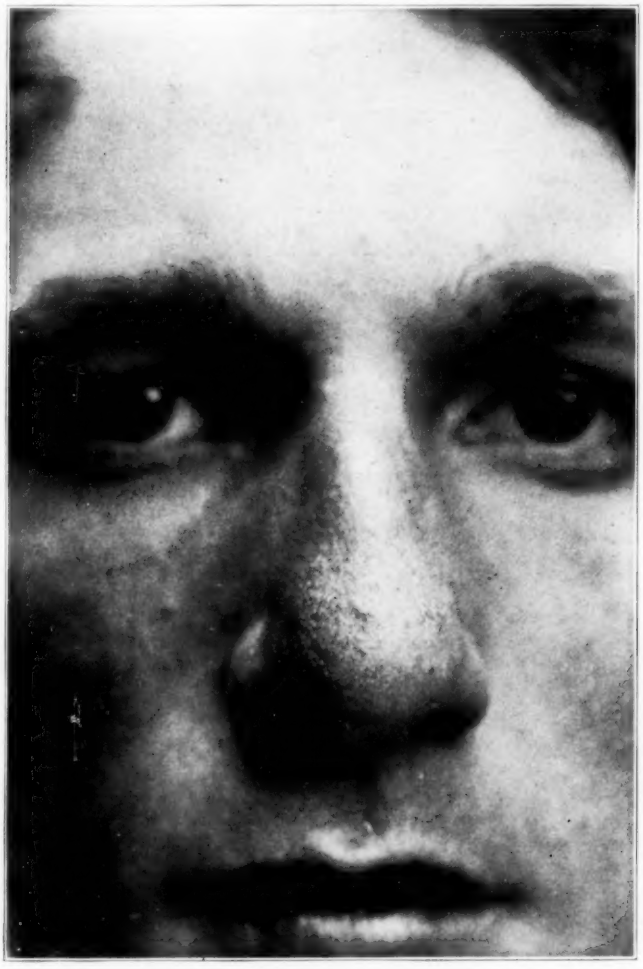


Fig. 1.—Papular lesions and sweat beads on nose.

no special arrangement. Umbilication, scaling, crusting and scarring were all conspicuously absent. The affected skin was granular and seemed to be somewhat atrophic. Near the tip of the nose there were five, scattered, translucent, bluish-gray, tense, ovoid lesions, which ranged in size from that of a large pinhead to that of a small pea. They were slightly elevated, located between the papules and seemed to have no connection with the pores. When pricked, such vesicles gave vent to a droplet of clear, slightly alkaline fluid.

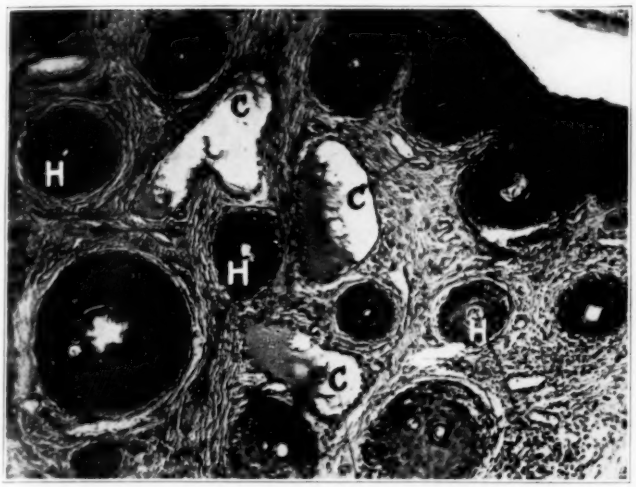


Fig. 2.—*c* indicates the dilated capillaries; *h*, the hair follicles.

Fig. 3.—*d* sweat duct with a surrounding cell filtrate, *i*.

Diagnosc.—Granulosis rubra nasi and hydrocystoma.

Histopathology.—The epidermis showed no changes worthy of mention.

In the corium many widely dilated capillaries were seen (fig. 2), particularly in its upper portion. These vessels had apparently normal walls. They were frequently surrounded by a cellular infiltrate composed of lymphocytes, a few plasma cells and large histiocytes, which did not form a compact sleevelike mass about any vessel. Many hair follicles were present, some being surrounded by an infiltrate like the one just described. The sebaceous glands showed a certain degree of hypertrophy, and they formed a uniform layer of large acini in the upper corium. The connective tissue was increased and sometimes the seat of hyaline changes. The elastic tissue was normal.

The sweat glands showed little departure from the normal. The sweat ducts were frequently and irregularly dilated at times, even forming cysts. In

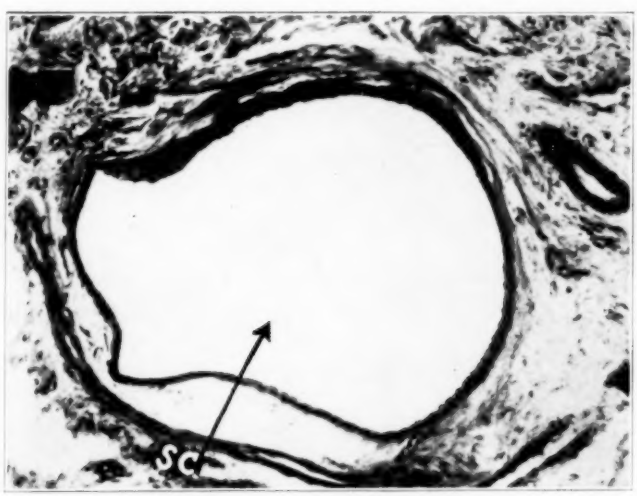


Fig. 4.—Sweat duct cyst, *sc*.

spots their walls were thickened. Infiltrations like those about the capillaries often encircled them (fig. 3). These cysts were empty and lined by a single layer of low cubical or flat epithelium (fig. 4). They were found in the middle portion of the corium. No connection was found between such a cyst and an adjacent sweat duct. The tissue examined was taken from the left ala nasi.

CONCLUSIONS

After reviewing the literature, and a study of my case, the following conclusions seem to be justified:

Granulosis rubra nasi is a definite clinical entity.

Its differentiation from acne rosacea should be emphasized.

This disorder has been reported by a large number of clinicians and is apparently not so rare.

It may be associated with lesions indistinguishable from those of hydrocystoma.

It does not always clear up spontaneously at puberty.

It would appear to be due to various causes and may be classed among Brocq's cutaneous reactions.

The roentgen rays and carbon dioxide snow seem to offer the most from a therapeutic standpoint.

7 West Madison Street.

DISCUSSION

Dr. John E. Lane, New Haven, Conn.: My experience has been limited to one case, and that was a typical one. It may be best to compare it with the case Dr. Beeson has reported. The typical case occurs in childhood, and disappears at puberty. The lesion is confined to the lower third of the nose, sharply marked off from the normal skin. There is an even redness over the affected area, covered with finely granular nodules evenly distributed. In my case the nodules were very fine, very much smaller than the smallest pinhead. There is on this red area, and only on this area, a hyperhidrosis which is marked. If the sweat is wiped away, the entire surface is immediately covered again with tiny droplets which come out very fast. In regard to the associated conditions found in some of the reported cases, it is my impression that they are simply accidental and have nothing to do with the disease itself. I have not been able to find anything in the histologic reports that would be of much assistance in the diagnosis. That is usually easily made clinically. In Dr. Beeson's patient the disease started at about twelve years of age, the time the typical case usually begins to recede. The lesion was not limited to the point of the nose, but involved the entire nose. The redness and granulations were not confined to one point, but were distributed over the whole of the central part of the nose. There was considerable telangiectasia, which does not occur in the typical case. In his case there was hydrocystoma. Dr. Beeson's case is unusual. The presence of the hydrocystoma and of the markedly telangiectatic vessels in addition to the redness, and the distribution, would incline me to the belief that there is another condition present in addition to the granulosis rubra nasi and hydrocystoma. Of course, it is extremely difficult, and perhaps unwise, to express any opinion in a complicated case of this sort without seeing the patient.

Dr. Walter J. Highman, New York: I think Dr. Beeson's case is one of rosacea rather than of granulosis rubra nasi. I should like to point out that in the adult if an excision for microscopic study is performed in the vicinity of the nose, the specimen always shows the type of infiltration seen by Dr. Beeson, even when there is no gross sign of disease, for the reason that the facial sebaceous glands are frequently subject to pathologic change which does not register clinically. The type of change demonstrated here throws no light on the pathogenesis of the lesion.

Dr. B. Barker Beeson, Chicago: The patient was seen by Dr. Ormsby, Dr. Lieberthal, Dr. Mitchell and several others, and my diagnosis was concurred in. I admit that in some respects the lesion looks like rosacea, but I will adhere to my diagnosis. For treatment, four applications of carbon dioxide snow were made, and that has apparently entirely removed the portions of the lesions which were treated.

A STUDY OF DANDRUFF AND OF THE PITYROSPORON OF MALASSEZ *

H. J. TEMPLETON, M.D.
OAKLAND, CALIF.

In an article entitled "Is Dandruff Seborrheal?" Rulison and Highman [1] pointed out the chaos which exists in our usual dermatologic textbook classification and consideration of seborrhea of the scalp and of dandruff. The pioneer work in this field was done by Sabouraud who gave a clear description of these various processes as they affect the scalp.[2] He pointed out the mistake of dividing seborrhea into an oily and dry form, showing that the so-called "dry seborrhea" is not a seborrhea at all [3] but a pityriasis caused by an organism not related to seborrhea. Moreover, he showed that dandruff is not seborrheal but rather pityriasic, either simple or complicated by a secondary infection.

Based on Sabouraud's work, Rulison and Highman classify and describe the various processes as follows:

1. Steatorrhea: An oily condition of the skin produced by a simple hypersecretion of the sebaceous glands. It is not caused by an infection. It occurs principally at puberty and is probably dependent on glandular changes associated with this period of life.

2. True seborrhea: An oily condition of the skin, inflammatory in origin, produced by an infection with the microbacillus of Unna. The infection is followed by a partial blocking of the excretory ducts of the sebaceous gland, by a compensatory hypertrophy of the glands themselves and by an excessive outpouring of sebum. When this occurs on the scalp it causes a gradual loss of hair which is permanent.

3. Pityriasis simplex capitis: A dry, furfuraceous condition of the scalp caused by infection with the pityrosporon of Malassez (also called the bottle bacillus or Flashenbacillus). The result is a dry, scaly dandruff which readily falls off onto the patient's coat as dry, white scales. Sabouraud likens this infection of the scalp to that produced on

---

* This is one of three papers forming a thesis leading to the degree of M.Sc. (Med.) in the Graduate School of Medicine of the University of Pennsylvania. The work was done in the Research Institute of Cutaneous Medicine under Dr. Jay Frank Schamberg and in the dermatologic clinic of Dr. Harry Alderson of Stanford University School of Medicine.

1. Rulison, Ray H., and Highman, Walter J.: Is Dandruff Seborrheal? Arch. Dermat. & Syph. **10**:429 (Oct.) 1924.

2. Sabouraud, R.: Maladies seborrheiques. Sabouraud, R.: Maladies desquamatives, Paris, 1904.

3. Sabouraud, R.: Maladies desquamatives, p. 295.

the body by *Microsporon furfur* of chromophytosis. He points out that the symptoms of dry, whitish, furfuraceous scaling of the two are similar, and that the pathology is somewhat analogous. The organisms are similar in that they resist cultivation, and he believes that they are possibly related biologically.[4] The pityrosporon of Malassez is constantly found in all cases of pityriasis simplex capitis, according to Sabouraud.[5] As I will point out later, my findings do not entirely agree with this statement.

4. Pityriasis steatoides: A scaly condition of the scalp in which the scales, instead of being dry as in pityriasis simplex, have an oily and greasy feel[6] when rubbed between the fingers. Instead of falling or brushing easily from the scalp, they are relatively tenacious and are not seen to fall down onto the coat as readily as in pityriasis simplex. This condition Sabouraud regarded as being due primarily to an infection with the pityrosporon of Malessez on which had become engrafted a secondary infection with the polymorphococcus of Unna.[7] He likened this secondary infection to that known as "impetiginization" elsewhere on the body.[8]

Pityriasis steatoides is the condition which some authors had considered as being a manifestation of seborrhea. Sabouraud proved that this was wrong by showing that the scales did not dissolve in a fat solvent and hence could not be sebum.[9] Moreover, he showed that microscopically the scales were of epidermic origin. Both the pityrosporon of Malassez and the white polymorphic coccus are found in large numbers in this condition.[10]

This grouping of all oily dandruffs under the head of pityriasis steatoides makes for a simple, easy classification. But, as I will show later, there are a number of various combinations of bacterial infection found in these oily dandruffs which do not fit in with Sabouraud's conception of pityriasis steatoides.

5. "Pityriasis of sub-seborrheic heavy scale:" This is a name given by Sabouraud to a combination of seborrhea, pityriasis simplex and pityriasis steatoides.[11]

---

4. Sabouraud, R.: Maladies desquamatives, p. 314.

5. Sabouraud, R.: Maladies desquamatives, p. 296.

6. I will use the descriptive adjectives "oily" and "greasy" when applying to dandruff in this work in the sense of the appearance and the "feel" to the examining fingers.

7. Sabouraud, R.: Maladies desquamatives, p. 318.

8. Sabouraud, R.: Maladies desquamatives, p. 374.

9. Sabouraud, R.: Maladies desquamatives, p. 320.

10. Sabouraud, R.: Maladies desquamatives, pp. 371-372.

11. Sabouraud, R.: Maladies desquamatives, p. 384.

THE PITYROSPORON OF MALASSEZ

This is the organism first described by Malassez in 1874, which Sabouraud found constantly associated with pityriasis simplex.[5] It is a large pleomorphic organism varying in shape and size (2-7 microns). Four distinct types are found:[12] first, a round spherical body 4 by 7 microns in diameter; second, an elongated banana shaped body about 2 by 6 microns; third, an elongated form constricted in the middle; fourth, a form resembling, somewhat, a budding yeast.

All of these four forms can be found in each of the cases showing this infection. No mycelial threads have been found.[13] Sabouraud tried to cultivate this organism on all the usual mediums and on special ones, such as bouillon from human skin, decoctions of human hair, gelatin with human urine, egg yolk, all sugar mediums, peptone mediums, "mout du biere," infusions of grains, human urine mixed with potato and gelatin.[14] His results were uniformly negative, and he concluded that "after thousands of experiments one can say that the pityrosporon of Malassez is not cultivated elsewhere than on the cornified epidermis of man."

Fig. 1.—Relative size and shape of various types of pityrosporon of Malassez.

He next takes up the question of the nature of this organism. He states that it cannot be a yeast as the yeasts are readily cultivated.[14] The possibility of it being a pleomorphic form of a bacillus or a coccus is considered and rejected.[15] He does not consider it a form of the microbacillus of Unna.[16] He concludes that it is an inferior cryptogamic parasite.[17]

PERSONAL INVESTIGATIONS

I have examined a series of cases of the various disorders of the scalp, including so-called "dry dandruff" and "greasy dandruff," normal scalps, bald scalps, cradle cap of infants, scalps of young children, seborrheic dermatitis of the scalp and psoriasis of the scalp. The pityrosporon of Malassez was also searched for on the oily seborrheic

12. Sabouraud, R.: Maladies desquamatives, p. 296.
13. Sabouraud, R.: Maladies desquamatives, p. 296.
14. Sabouraud, R.: Maladies desquamatives, p. 300.
15. Sabouraud, R.: Maladies desquamatives, p. 302.
16. Sabouraud, R.: Maladies desquamatives, p. 303.
17. Sabouraud, R.: Maladies desquamatives, p. 304.

foreheads of patients suffering from acne vulgaris and acne rosacea, sycosis vulgaris, and in the scales of seborrhea corporis.

From the beginning of my work I found it difficult to draw a sharp dividing line, clinically, between the dry dandruff of pityriasis simplex and the oily dandruff group. Clinically, one seemed to merge into the other, and it is my opinion that this is strictly true; for as the secondary infection with the polymorphococcus or microbacillus becomes gradually added to the simple infection with the pityrosporon, the dandruff very slowly changes from the dry to the oily type.

Another difficulty which I encountered was finding a number of normal scalps to act as controls. Several hundred scalps were inspected before the twenty-six normal scalps included in this series were found. Indeed, I have come to the conclusion that a normal scalp is a rarity. Levin reaches this same conclusion when he states that "a normal scalp is extremely rare. Practically speaking there is no scalp which is not infected in some way, to same degree." [18]

Examination of Clinical Normal Scalps.—Twenty-six subjects were finally found who presented no evidence of excessive oiliness, dandruff, inflammation or loss of hair. Thirteen of these were children under 15 years of age. The balance varied in age up to 59 years.

The pityrosporon of Malassez was found in the scrapings from eighteen of these controls (69 per cent). Fourteen showed the presence of microbacilli, but these were not usually as numerous as the pityrosporon. The polymorphous coccus was found in four of these controls in more than isolated units (that is, in pathologic numbers). In most of the cases which showed the presence of the pityrosporon, it occurred in rather large numbers, sometimes as profusely as in the cases of pityriasis simplex. Of the twelve control children below the age of 15 years, six (50 per cent) harbored these spores.

If the pityrosporon of Malassez is the cause of pityriasis simplex as claimed by Sabouraud, and the evidence in favor of this contention is extremely weighty, over half (69 per cent) of all clinically normal scalps can be said to be in a state of subinfection and will, in all probability, later develop dandruff.

Examination of Cases of Pityriasis Simplex Capitis.—Twenty-eight patients varying in age from early infancy to senility were selected as presenting rather typical pityriasis simplex. Twenty-seven of them (96 per cent) harbored the spores of Malassez on their scalps. Thirteen also showed the presence of the microbacillus and thirteen the polymorphococcus. However, the pityrosporon nearly always dominated the picture, the other organisms being present in small numbers.

18. Levin, Oscar L.: Your Hair and Your Health, New York, Greenberg Co., 1926, p. 44.

The almost constant presence of the pityrosporon of Malassez in pityriasis simplex is extremely suggestive. Even if we do not care to state positively that it is the cause of the disorder, we must admit that its constant presence is of great diagnostic importance.

It will be noted that in one of the patients with pityriasis simplex no trace of the pityrosporon could be found. I have observed this same thing in another series of cases.[19] This would lead me to believe that there are a few cases of dry dandruff which we would diagnose clinically as pityriasis simplex but which are not due to the pityrosporon of Malassez. I believe that they represent an entirely distinct disorder, an exfoliation of scales analogous to various epidermic exfoliations of the glabrous skin. This coincides with the opinion of Charles Greene Cumston who states that "it is certain that a process of desquamation similar to that met with on the skin exists on the scalp without in any way being related to seborrhea."[20]

Therefore I would add to Sabouraud and Rulison-Highman's classification, a type of dry dandruff not produced by an infection. This might be labeled "pityriasis idiopathica capitis."

Examination of Cases of Apparent Oily Dandruff.—The thirty-six cases which I had selected as being representative of the greasy, oily, dandruffy condition known as pityriasis steatoides presented such a variety of bacterial findings that I do not believe we can regard them as a single entity as did Sabouraud.

TABLE 1.—*Bacteriologic Observations in Oily, Greasy Dandruff*

	Per cent.
Group 1. Cases showing pityrosporon of Malassez only, 7 cases	19
Group 2. Cases showing the pityrosporon and the polymorphococcus, 8 cases	22
Group 3. Cases showing the pityrosporon and the microbacillus, 3 cases	8.3
Group 4. Cases showing microbacillus alone, 4 cases	11
Group 5. Cases showing microbacillus and polymorphococcus, 1 case	2.6
Group 6. Cases showing all three organisms, 13 cases	35

From this table we see that about 85 per cent of the cases of oily, greasy dandruff show the presence of the pityrosporon of Malassez. Although the incidence of this organism is not as high in this disorder as in pityriasis simplex, it was noted that it seemed to flourish in far greater abundance in this greasy soil.

Analysis of Groups.—Group 1: The pityrosporon of Malassez was the only organism found in the seven cases (19 per cent) of this group.

19. A series of ninety-six cases investigated in 1924 at the Graduate School of Medicine, University of Pennsylvania.

20. Cumston, Charles Greene: New York M. J. **113**:156, 1921.

These cases would seem to be cases of pityriasis simplex occurring on an abnormally oily skin.

Group 2: This group includes cases showing both the pityrosporon and the polymorphococcus. There were eight cases in this group (22 per cent). This combination of organisms is the one Sabouraud found in the cases which he designated as pityriasis steatoides.

Group 3: This group contains three cases (8.3 per cent) which show the pityrosporon together with the microbacillus of seborrhea. These are probably cases of pityriasis simplex occurring on a true seborrheic soil.

Groups 4 and 5: In the four cases in these groups no pityrosporon of Malassez were present. It is thus evident that this organism is not always the cause of oily dandruff. It is conceivable that the greasy, oily scales might simply be masses of epidermic exfoliation made oily by a certain amount of seborrhea. This theory is borne out by the fact that all four of these cases (group 4 plus group 5) showed the microbacillus

TABLE 2.—*Author's Suggestion for the Classification of Dandruff*

DRY DANDRUFF
1. Pityriasis idiopathica capitis.
2. Pityriasis simplex capitis.
APPARENTLY OILY DANDRUFF
1. Pityriasis simplex on an oily skin.
2. Pityriasis steatoides.
3. Pityriasis simplex plus true seborrhea.
4. True seborrhea with epidermic exfoliation.
5. Same as four plus a polymorphococcus infection.
6. Pityriasis of subseborrheic heavy scale.

of seborrhea. In one of the cases (group 5) there was a polymorphococcic infection superimposed.

Therefore we can conclude that in a certain small percentage of cases, oily, greasy dandruff *can* be seborrheal, although seborrhea is not the usual cause.

Group 6: All three organisms were found in these cases, numbering thirteen (36 per cent). This condition would correspond to what Sabouraud calls "Pityriasis of sub-seborrheic heavy scale," [11] in which there is a condition of seborrhea plus pityriasis simplex plus infection with the polymorphococcus.

Conclusion in Regard to Oily Dandruff.—The classification of these oily dandruffs is not as simple as Sabouraud states, as they do not all fit into his description of pityriasis steatoides. My findings would separate oily dandruff into several groups which I have just described.

MISCELLANEOUS OBSERVATIONS

Six cases of psoriasis of the scalp, five of seborrhea corporis and five of sycosis vulgaris were negative for the pityrosporon of Malassez.

Eleven normal foreheads were examined. The pityrosporon was found on three of these in very small numbers. They had probably lodged there after falling from their usual habitat on the scalp. Of six greasy foreheads, four showed the presence of pityrosporon in small numbers. These four cases were ones which had very many of the organisms on the scalp, whence the ones on the forehead had probably dropped.

All of the three typical cradle caps of infancy which I examined showed the presence of these spores. In addition, one showed a polymorphococcus and one a microbacillary infection.

Four scalps which were nearly totally bald were examined. Two of them harbored the pityrosporon, three the microbacillus and all four the polymorphococcus.

BACTERIOLOGIC STUDIES

Specimens for staining were obtained by scraping the scalps with a blunt eye spud. The material so obtained was rather forcibly rubbed onto a clean glass slide. No fixative was used or found necessary. In my early work I washed the film with ether to remove the fat as recommended by Sabouraud,[21] but this was found to be unnecessary. Various stains were tried but a five minute staining in Loffler's alkaline methylene blue was found to be the most satisfactory. The various types and sizes of the organism as described by Sabouraud and Malassez were readily demonstrated. It was noted that in children the spores tended to be mostly of the round type.

Attempts at Culturing the Pityrosporon of Malassez.—No matter how firmly we may be convinced in our minds that the pityrosporon of Malassez is the cause of pityriasis simplex et al., we cannot prove this contention until we fulfil Koch's postulates. In order to carry out inoculation experiments, it is necessary to obtain a pure culture of the organism. Hence the importance of cultivating it. Sabouraud's attempt to solve this problem and the various mediums he used are mentioned in the early part of this paper. He concluded that "the pityrosporon of Malassez does not grow on artificial media—after thousands of experiments one can say that it is not cultivated aside from on the cornified epidermis of man." [14]

I have tried to grow this organism on a number of various mediums, using scales of cases of pityriasis simplex which had been found to contain the pityrosporon as an inoculum. These scales were combed

21. Sabouraud, R., quoted by Rulison and Highman: Is Dandruff Seborrheal? Arch. Dermat. & Syph. **10**:436 (Oct.) 1924.

from the scalp with a sterile comb onto a sterile Petrie plate or, in the case of the solid mediums, were allowed to fall directly on the mediums in the Petrie plates. The mediums which I used included Sabouraud's medium, the same medium with 1 per cent of oleic acid, Sabouraud's medium with the p_H varying from 6 to 7, beerwort agar with the p_H varying from 6 to 7, bouillon of the human skin, brain medium, beerwort agar with 1 per cent of oleic acid, Russell's medium, galactose, levulose, lactose and saccharose mediums as described by Enlow, egg, litmus,

Fig. 2.—Pityrosporon of Malassez from dandruff scale colony grown on beer-wort agar.

gelatin, liquid beerwort, calcium carbonate medium, Avery's medium. These were incubated at room temperature and 37 C. under aerobic condition. I also tried the various modifications of Sabouraud's medium and beerwort agar under anaerobic conditions.

No growth of the pityrosporon of Malassez was obtained on any of the mediums with the exception of the various beerwort agar preparations. On these an undoubted but very slight growth of the organism occurred around the scales of dandruff which had been used as the inoculum. This growth could be noted after three or four days of

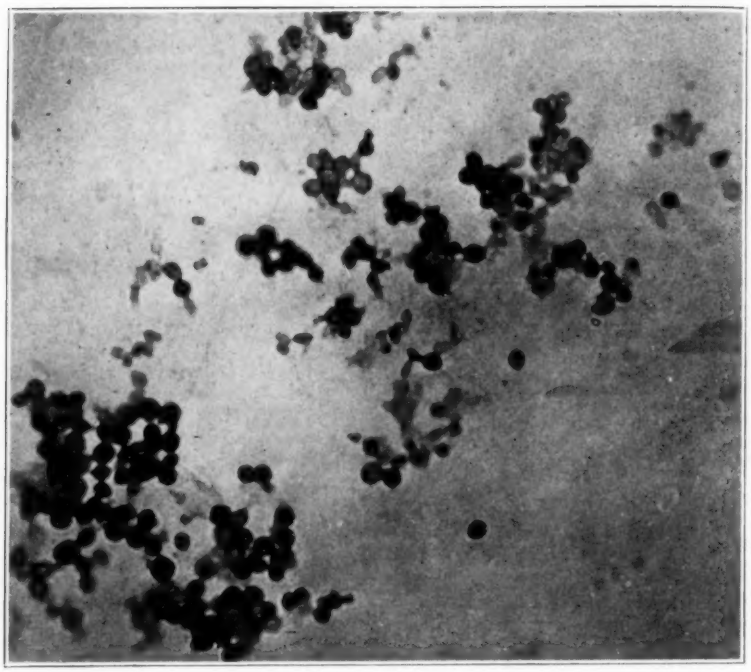


Fig. 3.—Practically a pure culture of the pityrosporon of Malassez grown on beerwort agar.

Fig. 4.—Scanty growth of the pityrosporon of Malassez in subculture of liquid beerwort.

incubation, and was merely a slight widening of the area occupied by the dandruff scale. When one of these dandruff scale colonies was picked up, spread on a slide, stained and examined it could be seen to consist of myriads of the spore (fig. 2). The countless numbers of these spores proved that growth had taken place, for scales examined directly from the scalp would contain only a fair number of organisms, whereas after several days' growth on the beerwort, the scale and its colony would contain great masses of the pityrosporon. It was not difficult to find colonies which were practically free from contamination (fig. 3). The beerwort seemed to act as an inhibitor to the polymorphococcus which flourished so abundantly on other mediums. Most of the spores assumed the round shaped type. This multiplication of the pityrosporon of Malassez around the dandruff scale took place best under anaerobic conditions on a medium composed of 1.5 per cent of agar and 2 per cent of glucose in beerwort with a p_H of 6.2. I was not successful except in one instance in obtaining a growth in subcultures. One transfer to a liquid beerwort medium produced a slight cloudiness in the bottom of the tube, and a meager growth was noted (fig. 4).

It seems that there is some substance in the dandruff scale which the spores require for their growth. Acting on this theory, I am collecting a large quantity of dandruff scales from both the dry and the oily types which I will use to enrich the beerwort mediums in my next attempts.

The slight growth which I have already obtained leads me to believe that the pityrosporon of Malassez can be cultivated successfully.

AN UNUSUAL ERUPTION DUE TO AN ORGANISM OF THE MONILIA GROUP

A PRELIMINARY REPORT *

ISAAC R. PELS, M.D.
IRMGAARD DRESEL, M.D.
AND
ROBERT SALINGER, M.D.
BALTIMORE

When first observed, this patient presented a most unusual picture. The secondary manifestations of the eruption were so misleading that the possibility of a mycotic etiology was not seriously considered. We were rather inclined to suspect an etiology of congenital character, such as ichthyosis, especially since the duration was practically throughout life; otherwise the eruption suggested a much exaggerated "cutaneous horn." The condition on the thumb, however, was suggestive of a fungous origin, although the routine tests were unsatisfactory at first; and the observations, especially at biopsy, were nondescript.

We suspected that the lifetime duration and the location of the eruption, chiefly on the seborrheal areas, would on biopsy disclose a congenital condition associated with the sebaceous gland tissues; yet two specimens, one from the upper part of the chest and another from the left cheek, gave no clue. The nature of the microscopic changes was, however, suggestive of a granuloma which could be evoked by some organism, particularly of a fungous type; and this view was supported by two colleagues to whom photographs and histologic specimens were submitted.

The continued efforts of one of us (D.) along bacteriologic lines gave the following results: A growth on Sabouraud's medium; successful intradermic inoculations into a guinea-pig; agglutination, with the patient's serum, of organisms in cultures from the mouth, scalp, hairs, face and finger nail; and no agglutination with a normal child's serum.

---

* From the Departments of Dermatology, Pathology and Bacteriology and Pediatrics, respectively, of the Johns Hopkins University.

* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* Because of lack of space, this article is here abbreviated by the omission of figures 3 and 5. The complete article appears in the Transactions of the Section and in the authors' reprints.

REPORT OF A CASE

History.—N. McB., a boy, aged 7, was born on a farm and reared in a village in Green County, Tennessee. This was the third of six pregnancies, and at present the patient is the only child living. The father died of "Bright's disease." On the farm there were no domestic animals that had skin diseases.

Fig. 1.—Appearance of head on admission to hospital.

The boy's birth was normal, and he was in good health until 9 months of age, when there appeared white areas in his mouth; and shortly afterward "scabs" appeared on the scalp and on the face. There was little spreading of this condition until he was 4 years old, when the entire face and the greater portion of the scalp and portions of the neck and chest became covered with thick, brown "crusts." The left thumb was injured when he was 3 years old,

and later developed the changes shown in the illustrations. He had received treatment of various kinds, including roentgenotherapy, without appreciable effect. The eruption persisted, without any other ailments, until he was admitted to the hospital on Sept. 23, 1925.

Fig. 2.—Another view of patient on admission to hospital. Note size and thickness of secondary lesions.

Examination.—The child was apparently in excellent health, and well nourished; the skin was of good color, and the hair was dark. The nails were normal except on the left thumb. There was no apparent thyroid enlargement. The axillary, epitrochlear and cervical lymph nodes especially in the anterior triangle, were palpable, but were not large. The hair was normal except where it was affected by the eruption. The condition of the mouth was not noted

on admission; but was much the same as described below. The skin on inspection was normal and normally moist. On the knees and legs were ill-defined patches of slight inflammatory reaction, the primary lesions not being seen; but there was slight scaling and crusting. On the heels there was moderate hyperkeratosis, not more prominent than one would usually expect.

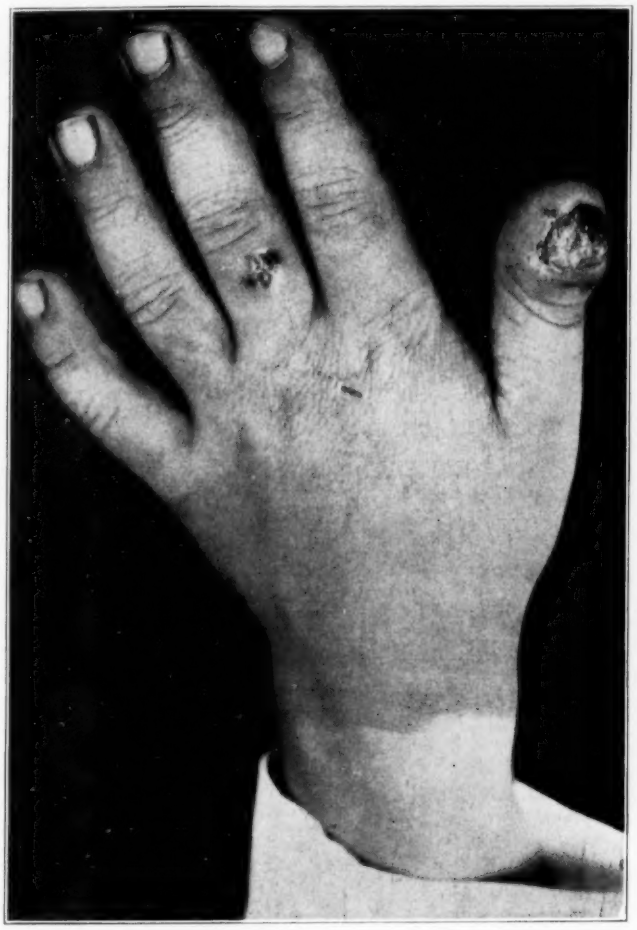


Fig. 4.—Area on second finger probably also infected with the organism.

Three areas were affected: first, the left thumb nail; second, the upper front of the chest, and third, the entire face, including the ears, nose, anterior portion of the scalp and a portion of the neck.

The thumb was enlarged in the nail area, apparently secondary to changes in the plate and bed. These were replaced by a thickened, irregular, grayish, dry tissue, which had lost all the characteristics of a nail plate. The skin immediately surrounding this was purplish pink, slightly infiltrated but not painful. On the chest were lesions similar to those on the face, but more discrete, consisting of isolated, grouped and confluent papules and nodules

which were slightly inflamed. They were apparently deep-seated, yellowish and pink, round, oval and globular, covered with a scale and, in some instances, an extremely thick, dry-looking or heaped-up and irregular crust. The largest lesion was about 0.5 cm. in diameter. On palpation, they were superficial but definitely infiltrating the skin. Scar formation was noticeable on the left side, in the areas of former lesions; and these scars were moderately depressed and showed many uneven pittings. The most striking change was on the face. Here the lesions were of the same character as on the chest, but almost entirely confluent except on the neck, posteriorly, and under the chin. Almost the entire face, including the nose and the ears, was covered, and this gave the impression of a general enlargement of the head. The eyebrows and eyelashes were almost entirely absent. The scalp was nearly covered with the eruption, chiefly in front and at the hair-skin borders, on the sides, and partly on the back. Individual lesions were merely exaggerations of those described on the chest. They consisted chiefly of a light brownish or dirty tan, heaped-up admixture of scales and crusts.

In some places on the face, secondary lesions were pointing like horns, and in thickness approximated 1 cm. or a little more. Where the lesions were confluent, for example, on the cheeks, forehead and chin, there was a diffuse erythema of the skin, which in some places exhibited well-defined margins. The skin of the affected areas was also moderately edematous and infiltrated. The lips were almost free, but occasional crusts and scales were seen. The eruption extended into the meati of the ears.

When a crust or a scale was removed, it was found to be extremely adherent, leaving an irregular, freely bleeding surface. On palpation the skin of the face was decidedly warm. There was some tenderness, apparently from mechanical pressure. On the scalp the eruption was not much inflamed, and the hair was matted. Discrete lesions were more numerous than on the face, and there was no special relationship to the hairs or to hair follicles. The secondary lesions did not differ from those just described.

The important characteristics of this eruption were the striking picture of confluence of the secondary lesions—a heaped-up admixture of dry scales and crusts. The primary lesions were not well seen, but appeared, in the main, as discrete and confluent papules.

Examination of the blood, including the cell count, differential cell count, the Wassermann test and the blood sugar, were normal or negative. The hemoglobin was 65 per cent (Sahli method).

Skin tests with old tuberculin (Pirquet test), and for scarlet fever (Dick test) and diphtheria (Schick test) were negative.

Urinalysis showed that the urine was normal except for a trace of acetone.

Pathologic Observations.—Two lesions were removed for study, one from the right side of the chest, another from the left cheek. The sections were mounted in paraffin and stained with hematoxylin and eosin, with polychrome methylene blue, with carbol-fuchsin (for tubercle bacilli) and with MacCallum's bacterial stain.

In the main the changes were similar in both sections but more striking in that from the cheek. Absence of hyperkeratosis was probably due to loss of the scale in preparation. The section from the chest showed changes chiefly in the epidermal layer and in the papillary layer. There was considerable hyperkeratosis with a slight tendency to parakeratosis, the scale being almost as thick as the rete pegs were long. There were no notable changes in the

rete except that the pegs were elongated and fairly regular. There was a certain amount of invasion by small mononuclear leukocytes and some vesiculation was seen. In the papillary layer there was considerable edema and a definite infiltration around the blood vessels. There was no special arrangement of the infiltrate, however; it was rather uniformly massive and consisted chiefly of small mononuclear leukocytes. This was confirmed by examination with a higher power lens. Collagen fibers appeared to be more nuclear than normal, giving evidence of proliferation, and there was an irregular occurrence of epithelioid cells in the stroma. This condition extended in some instances as far down as the location of the sweat glands, which, however, showed no variation from the normal. The elastic fibers appeared normal. There was, furthermore, no evidence of any invasion by mycelia or spores, and special stains for these, as well as for tubercle bacilli, were made without success.

Fig. 6.—Cultures on Sabouraud's medium, 2 to 6 weeks old.

Impression: A granuloma due to some undetermined organism.

Section Taken from Left Cheek.—The chief changes noted were in the epidermal layer and just beneath and extending rather deeply into the corium. There was moderate hyperkeratosis, in no way comparable to that found in the section from the chest. The rete layer was thickened, and the pegs showed considerable irregularity. Many of them were elongated, extending deeply into the corium. In places there was considerable flattening of the rete layer, and there were also numerous islands corresponding in every respect to the structure of the rete pegs. Many of the nuclei had been lost in the rete cells, and these cells showed some vacuolation and tiny areas of intercellular vesiculation. Some of these tiny vesicles lying in the rete contained small mononuclear cells. The papillary and the subpapillary layers showed considerable changes in the collagen fibers, which were increased in quantity and took part in making up a mass containing infiltration cells as well as epithelioid cells showing no special arrangement. The infiltrating cell was chiefly a small mononuclear; there were a few plasma cells. A stain for mast cells showed

these to be present in small numbers. The elastic fibers were unchanged. Deep down in the section were areas of the type just described, fairly well walled off and containing a number of giant cells with the nuclei arranged at the periphery. An occasional giant cell was also seen in the infiltrating mass beneath the epidermis, the nuclei having no particular arrangement. In the main, the blood vessels showed no striking change other than slight dilatation with no special relationship to the infiltrate. The sebaceous and the sweat glands appeared to be normal.

The impression obtained from this picture was that of a chronic granulation tissue or granuloma, not tuberculous, not syphilitic, probably due to an undetermined organism.

Bacteriologic Observations (Dr. Dresel).—On cultivating scales, hair, scrapings from the thumb nail and material from the tongue, a fungus-like organism

Fig. 7.—Smear from culture of Monilia showing branching mycelium and clusters of spores.

was obtained which appeared as small colonies on Sabouraud's acid maltose agar on the fourth to the fifth day. These colonies increased steadily in size during the following days and weeks. Each represented a well raised white plaque, and had a glistening, smooth appearance. The periphery showed a fine, delicately rayed area. The raised center became wrinkled as the culture aged, but pigment formation was not observed. Subcultures gave a growth on the second day. The organism grew best on Sabouraud's (acid) agar, but grew quite well on alkaline mediums also.

Microscopic Examination.—The organism appeared as spores and hyphae. The spores varied in size and in shape. They were about from 3.5 to 6 microns in diameter, and were round and oval. The hyphae were septate and showed true branching. Multiplication occurred by budding from either the round

sporelike cells or from the hyphae. The buds resulted either in the formation of other spores or in mycelial threads.

Biochemical Characters.—Fermentation reactions were as follows: Gas and acid were formed in dextrose and in maltose; lactose, mannite, saccharose and xylose were not fermented. Gelatin was not liquefied.

Serologic Reactions.—The serum of the patient—in a dilution of 1:75—agglutinated the organism. The complement-fixation test of the patient's serum was positive with the organism. Normal human serum was used as a control and showed no agglutination nor complement-fixation reaction.

Animal Experiments.—Two guinea-pigs were inoculated, one intradermally and one intraperitoneally. The animal which was given the intradermal injection in two places showed skin lesions at the sites of the injections. These lesions were well raised papules 1.5 cm. in diameter, with white centers and pronounced red outer zones. After from two to three days, the white centers dried, and a crust formation occurred. One crust was removed and inoculated on Sabouraud's agar, from which the organism was recovered. A direct smear from this crust showed typical spores. The skin lesions healed after about ten days.

The animal which was given the intraperitoneal injection did not show any clinical changes nor any pathologic lesions.

The serums of these animals exhibited no specific immune reactions toward the organism, possibly because the duration of the infection was too brief.

It appeared certain that the organism isolated from the lesions was the cause of the eruption and of the lesions in the mouth, for the following reasons: 1. It was possible to grow in cultures the organism obtained from the various areas affected (scales, hair, nail and tongue). 2. The organism was readily and easily observed in direct preparations made from all the lesions. 3. The serum of the patient exhibited immune reactions toward the isolated organism.

Classification.—Although this study is not complete, the organism, at the present time, appears to belong to the genus *Monilia* or *Oidium* as defined by Castellani.

It resembled *Monilia* in fermenting glucose and maltose, together with acid and gas formation; but we were in doubt regarding the manner of spore formation at the ends of the terminal hyphae.

The organism was carefully compared with *Monilia albicans* and appeared to be closely related to it, although it showed slight morphologic differences. It did not liquefy gelatin as did the type strain described by Castellani and Chalmers.

Moreover, it differed from the trichophytons in its gross cultural appearance, particularly in the rapidity of growth, absence of aerial hyphae and failure to produce chains of spores.

It did not resemble these strains of sporothrix: *Sporothrix schenckii*, sporothrix of a horse isolated by K. F. Meyer (1917) and *Sporothrix carnis* isolated in 1915.

Treatment and Course.—Treatment was entirely palliative until the diagnosis was established. The crusts and scales were softened with bland oils every day, after which an ointment of salicylic acid and sulphur, each 2 per cent, in equal parts of hydrous wool fat and petrolatum, was kept constantly applied.

Six roentgen-ray treatments were given on the cheeks and ears at intervals of from five to seven days; and on the thumb, two treatments, four weeks

apart. The total dose was approximately 1½ skin units on the cheeks and ears and 2½ skin units on the thumb, in forty-eight days.

(The constants employed with an interrupterless transformer were 5 milliamperes, spark gap 6 inches [15.24 cm.], target distance 12 inches [30.48 cm.] passed through 0.5 mm. aluminum and 2 layers of chamois. The indirect estimation of MacKee was followed.)

Fig. 8.—Appearance of patient after incomplete treatment.

Iodide of potash was given irregularly in 2 grain (0.13 Gm.) doses, three times daily; a mild antiseptic mouth wash was also used.

There was considerable improvement, especially on the irradiated areas; but on Dec. 12, 1925, the boy developed fever of 102 F., had a sore mouth which exhibited a creamy or flaky and striated, adherent, white covering on the tongue and on the buccal mucosae. This covering was both patchy and in shreds. The tongue was slightly swollen, the edges were indented, and were apparently flattened out and thinned. The indentations corresponded to areas in contact with the teeth.

He subsequently left the hospital when afebrile, with considerable lessening of the eruption; shortly thereafter he developed measles, varicella and pneumonia, from which he recovered.

At present he is taking potassium iodide, using an antiseptic mouth wash, and applying to the affected skin an ointment containing the yellow mercuric oxide (4 per cent) and salicylic acid (6 per cent). It is planned eventually to try the effect of autogenous vaccine made from the organism.

COMMENT

Any practicable discussion of this case must of course rest with an accurate determination of the etiologic agent. We are, by virtue of the incomplete observations, confronted with the customary problem of finding the exact place for the organism in the general scheme of the fungi.

It may be of some interest to call attention briefly to the clinical aspects of certain dermatomycoses which in some manner resemble our observations. The variations, however, in the clinical picture of these diseases, may be so protean as to bring about a resemblance of any two diseases; so that the diagnosis eventually must rest with the laboratory results. For instance, we once saw a man who exhibited a fairly typical picture of sporotrichosis of the left foot and entire leg, with nodules and abscesses arranged particularly along the lymphatic trunks, all containing thick or creamy pus, from which blastomyces were easily demonstrated in smears and in cultures.

When we consider the extensive sporotrichum group, we find that the manifestations are truly protean. Gougerot [1] states that the "sporotrichoses dermiques" may simulate vegetating and verrucous tuberculosis, scrofulodermas, lupus, syphilids, the acnes, epitheliomas, etc.; and that the "sporotrichoses epidermiques" may simulate ordinary pityriasis of the face, eczema, erythematosquamous dermatoses, and even trichophytic circinate herpes. Quoting further: "On the mucosae they give all the varieties of angina, stomatitis, glossitis, laryngitis, erythematous, vegetating, ulcerated, and suppurating rhinitis." De Beurmann and Gougerot [2] demonstrated, in 1906, types of dermic sporotrichosids which "simulate ecthyma and often resemble more or less papulo-crustaceous syphilis, and even papulo-squamous tuberculides or the ulcerated erythema induratum of Bazin."

As the hair of our patient was not affected by the parasite, it would seem irrelevant to discuss the large group of tricophyton eruptions. In passing, mention should be made, however, of the familiar manifestation of the achorions, notably of favus, which may occur as a widespread, crusted and scaling eruption on the skin and nails.

---

1. Gougerot: La dermatologie en clientele, ed. 2, Paris, Maloine et Fils, 1919.
2. De Beurmann and Gougerot: Ann. de dermat. et syph. **7**:837, 1906.

The thrush infections of the skin have been described recently in an excellent and exhaustive review by Shelmire.[3] It appears that involvement of the mouth is not always an accompanying feature in the various types discussed. He states that "the majority of cases reported displayed two or more types of infection, or better, two or more localizations of this same dermatosis." Furthermore, the dermatomycotic lesions most frequently begin as pinhead sized vesicles and pustules, or as erythema, becoming confluent into patches which may be weeping, on intertriginous areas (crural, anal, interdigital); or, according to Kumer,[4] the primary lesions may be dry, beginning as papules or as erythema, together with scaling, and appearing on the face, scalp, extremities or nails.

A partial search of the literature to date, on thrush or especially *Monilia* affections of the skin, revealed nothing of value which might be added to Shelmire's report. The cases of Schamberg, Lombardo,[5] Mucci,[6] Christison,[7] and Schultz,[8] all of which exhibited involvement of the skin, nails, or both are evidently examples resembling in part the conditions described here. Castellani and Chalmers'[9] designation of thrush infections includes the group of *Monilia,* and Plaut[10] also includes it in his table of *Soorpilz.*

Since our organism was agglutinated by the serum of the patient, although in rather low titer, it would appear probable that the organism would be found in the deeper layers of the derma. This, however, was not the case, although the search may not have been sufficiently diligent. We do not know just how definitely this relationship exists, namely, the degree of penetration of the organism and the limits of the titer in positive agglutination.

A discussion of the differential diagnostic features of this eruption would obviously be premature, lacking complete etiologic study. It is therefore deemed sufficient to state known facts and to indicate where possible any resemblance to well-known affections of this type.

When our bacteriologic studies permit a more definite classification of the organism, we hope to report the findings in detail together with notes on progress and treatment of the patient.

---

3. Shelmire, B.: Thrush Infections of Skin, Arch. Dermat. & Syph. **12:** 789 (Dec.) 1925.

4. Kumer: Arch. f. Dermat. u. Syph. **140:**105, 1922.

5. Schamberg and Lombardo, quoted by Shelmire (footnote 3).

6. Mucci: Zentralbl. f. Haut. u. Geschlechtskrankh. **18:**82, 1925.

7. Christison: Am. J. Dis. Child. **26:**250, 1924.

8. Schultz: Am. J. Dis. Child. **29:**283, 1925.

9. Castellani and Chalmers: Manual of Tropical Medicine, ed. 3, New York, William Wood and Company, 1919.

10. Plaut, in Kolle and von Wassermann: Handbuch der Pathogenen Mikroorganismen, ed. 2, Jena, Gustav Fischer, **5,** 1913.

This report should serve the purpose of calling attention to the following facts: (1) the incidence and the striking clinical resemblance of certain dermatomycoses to one another and to other dermatoses; (2) the protean and widespread aspects of any one disease produced by a fungus; (3) the possible long duration; (4) remissions and resistance to treatment; (5) the imperative requirements for laboratory procedures in order to establish a correct diagnosis.

SUMMARY

Report is made of an unusual eruption, caused by a fungus, on a boy, involving the face, ears, scalp, neck, upper chest, one thumb and mouth. Emphasis is laid on the almost lifelong duration (seven years), as well as on resistance to treatment.

The laboratory findings showed an organism of the *Monilia* group (of the fungi imperfecti which cause thrush infection). This organism was repeatedly recovered from all involved areas. The serum of the patient agglutinated the organism, which was not agglutinated by a normal child's serum. Inoculation of guinea-pigs was partially successful, but the animals recovered.

Brief discussion is given of the varied manifestations of certain dermatomycoses and of their resemblance to one another; and attention is called to the necessity and significance of laboratory procedures in diagnosis.

ADDENDUM

Two weeks previous to April 30, 1926, our patient developed a severe diarrhea. He became very weak, had abdominal pains after eating, and lost 6 pounds in weight. He reentered the hospital with what appeared to be typhoid fever, together with anemia, leukopenia, a palpable spleen and a temperature varying from 100.2 F. to 104 F. The diarrhea and loss of weight continued, and he died on May 11, 1926.

At necropsy (performed by Dr. F. B. Kindell) there were multiple masses diffusely scattered throughout both lungs—pinhead to large walnut in size. They were firm, and on section showed yellow necrotic centers. The mediastinal glands were enlarged, and both spleen and liver were large. The large intestines had greatly thickened walls which were lined with thick purulent material.

DISCUSSION

Dr. Aldo Castellani, New Orleans: The first sporotrichum connected in any way with man was found more than one hundred years ago: *S. inquinatum* Link, 1809. The second sporotrichum found connected with man (*S. bronchiale* Montagne) was discovered in 1844, in the bronchial secretion of a man supposed to be suffering from tuberculosis, but the real history of sporotrichosis begins with the names of Schenck, Hektoen and Perkins. Their work will remain classical. As to the classification of yeastlike fungi, for several years Chalmers and I have attempted a botanical classification, but for clinicians I have found the following scheme useful. We must give importance to two

factors, the presence or absence of ascospores and the presence or absence of mycelium.

In the ascospores present group are: mycelium absent, *Saccharomyces sensu-lato;* mycelium present, *Endomyces.* In the ascospores absent group are: mycelium absent, *Cryptococcus sensu-lato* and mycelium present, *Monilia sensu-lato.* The yeastlike fungus found in Dr. Pels' case produces no ascospores and possesses little mycelium. It is therefore a *Monilia.* There are a large number of species of the genus *Monilia* which can hardly be differentiated on morphologic grounds. They can be differentiated on biochemical grounds by the production of gas in various sugar mediums: *Monilia balcanica* group, gas produced in glucose only; *Monilia krusei* group, gas produced in glucose and levulose; *Monilia pinoyi* group, gas produced in glucose, levulose and maltose; *Monilia matalondinensis* group, gas produced in glucose, levulose, maltose and galactose; *Monilia tropicalis* group, gas produced in glucose, levulose, maltose, galactose and saccharose; *Monilia guillermondi* group, gas produced in glucose, levulose and saccharose; *Monilia macedoniensis* group, gas produced in glucose, levulose, galactose, saccharose and insulin; *Monilia pseudotropicalis* group, gas produced in lactose, in addition to other sugars; *Monilia pseudolondinesis* group, gas produced in dextrin in addition to other sugars; *Monilia zeylanica* group, gas not produced in any sugar. From the fermentative characters mentioned by the author, it would appear that the *Monilia* isolated in his case probably belongs to the group *Pinoyi.*

Dr. E. D. Crutchfield, Galveston, Texas: My experience with sporotrichosis is limited to five cases. Until I read Dr. Foerster's paper, I had the impression that the disease was produced by inoculation of the organism by any traumatic means. It is interesting to know that the barberry shrub, particularly the thorn, is very important, and so far as I know the only proved way in which the disease may be inoculated. Galveston is on an island which has been raised about 10 feet by pumping in sand. The entire surface of the island is covered with soil of some kind, and the soil is covered with fertilizer, usually animal excreta. It had occurred to me that perhaps the sporothrix had its origin in the fertilizer. In one instance, the case of a longshoreman, there was no possibility of his having come in contact with bushes of any kind. On the other hand, he had contact with household pets, one of which had mange, and we thought that might have been the place of origin. Again, since the organism is found in the nasal secretion of both men and animals, and in the alimentary tract, it might be possible that the origin of the sporothrix was in the fertilizer. It would be interesting if Dr. Foerster could tell us whether this was possible. I think that perhaps in warm climates the clinical characteristics of these fungus diseases vary more than in the northern climate The striking thing to me was that a great many of these mycotic infections present varying clinical aspects. I feel that these actinomycoses, sporotrichoses, Madura foot and the *Monilia* group all show these varying clinical manifestations.

Dr. Howard King, Nashville, Tenn.: I now have under observation a case almost similar to Dr. Pels' case. The patient is a negro laborer who has lesions almost identical with those shown. The lesions are confined largely to the nose and other parts of the face, the fingers, wrists and ankles. When first observed some of these lesions had the appearance, especially the paronychial lesions, of tuberculosis and blastomycosis. In some smears from the skin lesions cultures were obtained which grew well, and were typical of those shown by Dr. Pels. The man was placed on potassium iodide immediately, up to 90 grains (5.7 Gm.) a day. The lesions were kept moist with

compound solution of iodine. They began to heal promptly, and within from three to four weeks had practically all disappeared. On roentgenologic examination of the chest and bones no internal lesions could be demonstrated, and none were detected about the scrotum or testes on the first examination. After he had been on this treatment for about four weeks, however, it was discovered that the testes were rapidly enlarging. The scrotal wall over the testes had two indurated nodules, and each testis was involved. Dr. Morgan opened one of these lesions and obtained cultures there, but they did not show up for about two weeks. The question arose as to how to treat the patient as the other lesions were getting well, and the scrotal lesions were becoming worse. The genito-urinary surgeon insisted that castration should be performed. I felt that it would be better to try some radiotherapy. We are using this, and the man is improving. This is embarrassing because we are afraid it may produce sterilization, but we are attempting to prevent this. The lesions are now about one-half the size they were in the beginning. Each testis was about twice the size of the normal testis.

Dr. Harry R. Foerster, Milwaukee: I should consider fertilizer a possible source of *Sporothrix*. I believe there may be many sources, and I was attempting to point out just one which, in the group I observed, was of considerable significance. In this group I do not think that accidental contamination of shrubbery by fertilizer was a factor because most of the shrubs handled were in the warehouse, dry, prepared for planting or for shipment.

Dr. Isaac R. Pels, Baltimore: This is just a temporary report, and we intend to classify this organism according to the tables which Dr. Castellani's book indicates. In the matter of thrush infections, we believe this case should be included in that group, which is in considerable confusion at present. I think one gets that impression also in reading Dr. Shelmire's paper. The mouth may be infected, with no lesions on the skin, or the mouth infection may be absent, and the skin and nails only involved. As to treatment, this child received treatment with potassium iodide, in 2 grain (0.13 Gm.) doses, for a considerable time, but we felt that when he was receiving even simple ointments on the skin, the idiode was not bringing about improvement. It was not until other treatment was instituted, particularly the use of the roentgen ray, that we noted improvement. That applies particularly to the cheeks, which were most affected.

CRITICAL INVESTIGATION OF THE RELATION OF THE END-PRODUCTS OF PROTEIN METABOLISM TO ECZEMA AND KINDRED DISORDERS *

JEFFREY C. MICHAEL, M.D.

HOUSTON, TEXAS

For many years it has been suggested that hyperuricemia had an etiologic relation to eczema. The earlier assumptions of this association were based wholly, or chiefly, on clinical evidence, but in recent years rather extensive investigation of this question by biochemical methods has resulted in an apparent confirmation of it, or at least has furnished it a certain measure of scientific support. Indeed, it appears from these recent studies that the association of these two conditions is fairly common; at least in that etiologic variety of eczema which is designated endogenous by those who regard eczema as a disease of varied but necessarily of internal origin—a conception to which I do not subscribe.

Of course, the association of hyperuricemia and eczema is open to more than one interpretation, and since the question is of importance in the study of the pathogenicity of eczema, there has been no lack of discussion as to which interpretation is the correct one. There are those who believe the relationship is of real pathogenic significance, and also those who consider the association fortuitous.

Certain methods of study of this problem seemed to offer a prospect of elucidating some of its obscurities and therefore have been undertaken. Originally, the object was the simple one of determining the dermal effects produced by intracutaneous injections of uric acid, but, as not infrequently happens under similar circumstances, the study broadened out into a more comprehensive investigation of the presumed eczematogenous properties of the protein metabolic end-products.

While the main concern of this study has been with uric acid, as it went along, investigation of urea and creatinine were included, so as to round out the triad of protein end-products. Urea has been regarded as possibly of etiologic importance in eczema and pruritus, but, so far as I can determine, creatinine has not been mentioned in this respect.

REVIEW OF THE LITERATURE

Besnier [1] credits Tilbury Fox with first formally enunciating and championing the uric acid hypothesis. Fox's conception that increased

---

* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Besnier: Eczema, la pratique dermatologique, Paris, Masson et Cie, 1900.

circulating uric acid acted as a cutaneous irritant has been referred to by Schamberg and Brown [2] who are mainly responsible for the recent revival of interest in this subject.

Hebra rejected the uric acid hypothesis, as he did all other theories that admitted an internal origin for eczema. The question, which was one of lively interest in the 70's and 80's of the last century, was submerged in the wave of bacteriologic study of eczema that followed Unna's announcement of the quickly discredited morococcus.

Not until 1913 did it formally reappear, when Johnston,[3] with his customary zeal for the application of newly evolved methods of examination to the study of skin diseases, investigated the nitrogen metabolism of eczema, and concluded that the cause of the disease "may be narrowed down to a derangement of the nitrogen metabolism, neither anaphylatic nor a defective synthesis of urea, but occurring where for the moment biochemistry cannot demonstrate it." Gout, he believed, must be a contributing factor in the disease. In more recent literature is to be found both acceptation of and opposition to the assumption of the importance of uric acid as a causative agent of eczema and pruritus. In the first place, it is evident that many clinicians accept the relationship of the two disorders without subjecting the question to critical analysis. Such general papers, to instance two recent ones, as those of Goeckerman [4] and Sellei [5] are examples of this.

Kromayer,[6] however, in an extensive clinical study of this subject, records observations that lead him to accord considerable importance to the rôle played by uric acid in eczema. On the other hand, Bloch,[7] Ehrmann [8] and Highman [9] dispute or express skepticism of the presumed etiologic rôle of hyperuricemia in eczema. Pernet [10] also recently

---

2. Schamberg, J. F., and Brown, H.: A Study of the Blood Uric Acid in Diseases of the Skin, with Particular Reference to Eczema and Pruritus. Based on an Analysis of the Blood of 280 Patients, Arch. Dermat. & Syph. **8**:801 (Dec.) 1923.

3. Johnston, J. C.: Speculations as to the Causation of Eczema, J. Cutan. Dis. **31**:3 (Jan.) 1913.

4. Goeckerman, W. H.: The Itching Skin a Symptom of Systemic Disease, M. J. & Rec. **122**:83, 1925.

5. Sellei, J.: Ueber Jucken, Ref. Zentralbl. f. Haut. u. Geschlechtskrank. **18**:835, 1926.

6. Kromayer: Ekzem. und harnsaure Diathese, Deutsche med. Wchnschr. **51**:1527, 1925.

7. Bloch, B.: Pathogenese des Ekzems, Arch. f. Dermat. u. Syph. **145**:34 and 152, 1924.

8. Ehrmann, S.: Beziehungen der exzematosen Erkrankungen zu inneren Leiden, Ref. Zentralbl. f. Haut. u. Geschlechtskrankh. **16**:202, 1925.

9. Highman, W. J.: Eczema and Dermatitis, Arch. Dermat. & Syph. **11**:303 (March) 1925.

10. Pernet, G., in discussion of Race, J.: Biochemical Aspect of the Rôle of Uric Acid in Gout, Proc. Roy. Soc. Med. **17**:38, 1923.

mentioned that in his experience the association of gout and eczema was uncommon.

Schamberg and Brown,[11] in a combined biochemical and clinical study, analyzed the blood uric acid content in 161 cases of eczema and found that 71 (44 per cent) gave a value over 3.7 mg. per hundred cubic centimeters of blood.[12] The figure of 3.7 mg. they considered as representing the upper normal limit of uric acid blood content. In addition, of 10 cases of cutaneous pruritus 5 (50 per cent), and of 18 cases of localized pruritus, 6 (33 per cent) gave excessively high blood uric acid findings. In psoriasis, rosacea, acne vulgaris and urticaria, smaller percentages of cases showed abnormally high uric acid blood content.

These authors, likewise, lay some stress on the point that some of their patients with hyperuricemia when put on a purin-free diet showed more prompt and satisfactory clinical improvement than patients in whom this dietary measure was not instituted. These favorable effects were not attributed to diet alone, but to the consequent reduction of the hyperuricemia. This study deserves serious consideration. The actual results are, of course, incontrovertible, but their significance, in common with all deductions from scientific evidence, is subject to independent interpretation.

In addition to Schamberg and Brown's investigation, almost simultaneously were recorded those of Pulay [13] and Kambayashi and Kiuchi,[14] who likewise found hyperuricemia in an appreciable percentage of cases of eczema and other pruritic disorders, although their investigations comprised a smaller number of cases.

I wish here to refer to a hypothesis of Pulay's, namely, that excessive uric acid in the tissues acts as an irritant to the sensory nerve terminals, and that possibly this action is attributable to a photodynamic property of uric acid.

The investigation of skin sensitivity to metabolic products has received little attention; to be mentioned here are only the studies of Jaeger [15] and Schürch.[16]

Jaeger, in an extensive investigation of the hypersensitivity of eczematous skin to exogenous irritants tried (in an unstated but appar-

---

11. Schamberg and Brown (footnote 2).

12. In this paper, henceforth the term milligrams will be used to indicate milligrams per 100 cubic centimeters of blood plasma.

13. Pulay, E.: Intermediarer Stoffwechsel und Hautkrankheiten, Dermat. Wchnschr. **76**:577, 1923.

14. Kambayashi, I., and Kiuchi, M.: Untersuchungen des Stoffwechsels bei juckenden Dermatosen, Japan. J. Dermat. u. Urol. **23**:444, 1923.

15. Jaeger, H.: De la nature de l'eczema, Ann. Dermat. et Syph. **4**:10 and 109, 1923.

16. Schürch, O.: Reizversuche mit Physiologischen Substanzen auf der Haut von Normalen und Ekzematikern, Klin. Wchnschr. **4**:11 (Jan. 1) 1925.

ently minor number of cases) the effect on the skin of serum, plasma and the hemolysate of erythrocytes obtained from the blood of eczematous patients, but failed to produce irritative effects.

Schürch, using the contact method of Jaeger, investigated skin sensitivity to many endogenous substances; among them, sodium urate in 1 per cent solution. It appears from his report that thirty-one patients with eczema were tested with this substance, none of whom gave a positive result. There were 306 noneczematous persons used as controls, but the number tested with urate solution is not given. The fact that the sodium urate solution was applied for twenty-four hours to the unbroken skin is objectionable, because it is presumable that chemical changes (oxidation) would occur that might vitiate the results.

SCOPE OF PRESENT STUDY

Four routes have been followed in this study: (1) blood chemical estimations; (2) intradermal injections of solutions of these metabolites; (3) investigation of their photosensitizing effects on the skin, and (4) intravenous injections of lithium urate solutions in patients with eczema. As previously mentioned, uric acid has received the most attention.

The last three methods of study should reveal any dermal irritating properties possessed by these metabolites. If they act on the skin in the same way as other chemical compounds capable of producing eczema, then this action should be evident. Granted for the purpose of discussion that they have eczematogenous properties, then one would naturally expect idiosyncrasy to play a rôle, since it is plain that not every individual with hyperuricemia develops eczema or some kindred disorder.

That phase of the subject relating to the action of these metabolic substances as possible predisposing factors in eczema has not been studied. In some of its aspects this is approachable experimentally, but its complete or even partial elucidation is at present impossible, since one of its requisites is a more complete knowledge of idiosyncratic processes than we possess. Certain inferences might be drawn from the result of this study but have been avoided purposely.

BLOOD URIC ACID ESTIMATIONS

For the purpose of correlating the results of the intradermal injections with the blood content of this metabolite, a blood uric acid estimation was made on nearly every patient with eczema and cutaneous pruritus, and these determinations, with a few available from my private records, comprise a total of 75 tests which are recorded in chart 1. Sixty of these tests were made on patients with eczema or pruritus. All blood samples were taken in the morning before breakfast. The Benedict test for blood uric acid was used in these determinations. The upper normal value by this test is given in authoritative texts at 4 mg. per hundred

cubic centimeters of blood, and it will be seen that thirty-two (40.3 per cent) of all patients gave a value exceeding 4 mg., while forty-three (59.7 per cent) showed 4 mg. or less. The finding of about 40 per cent of presumed abnormally high values of circulating uric acid approximates the figure of Schamberg and Brown for their much larger series.

As was to be expected, the percentage of increased uric acid findings mounted with the age of the patients, when they were arranged in groups by decades. But the numbers in each group are too small to allow conclusions and therefore have not been tabulated. There was no indication that one type of eczema was more often associated with hyperuri-

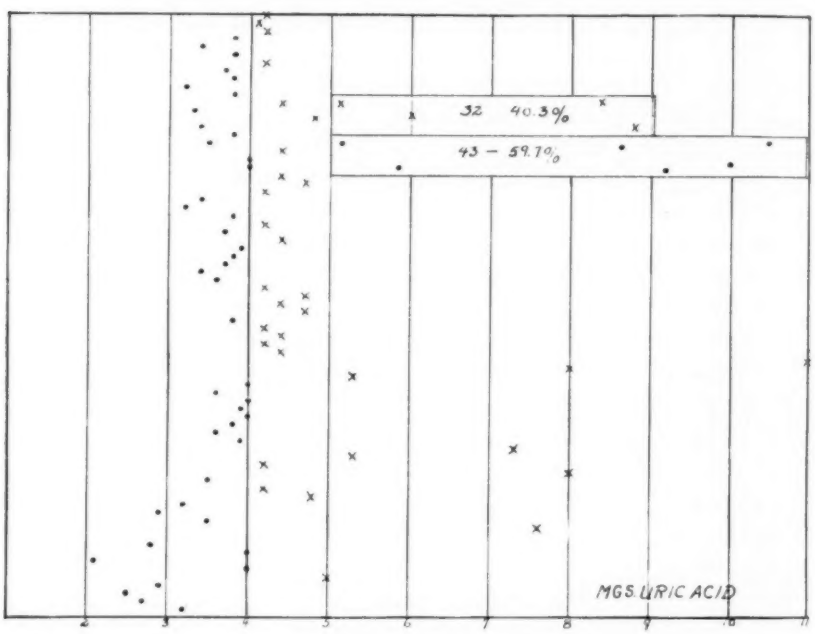


Chart 1.—Each blood uric acid estimation is represented by a dot or cross, the former signifying values of 4 mg. or below; the latter, values above 4 mg.

cemia than another; nor was kidney disease particularly noticeable among the hyperuricemic patients. It was found in a few cases that there was some fluctuation in the blood uric acid level when the test was repeated; that is, a fluctuation that was greater than the limit of allowable technical error.

Leaving aside, for the moment, the information furnished by the other methods of investigation recorded below, the question arises as to the significance of hyperuricemia in eczema and kindred disorders. In the first place, there is no unanimity as to what constitutes an exces-

sive figure for circulating uric acid. Gudzent [17] stated that the highest normal value of human blood is 4.2 to 4.5 mg. of pure uric acid (Maase-Zondek method). Berglund [18] says that "values of 5.5 mg. and even 6 mg. per 100 cc. of plasma are a normal finding in healthy individuals, living on an ordinary mixed diet." This author based his statements on estimations with the Folin-Wu method. From recent studies of Folin, Berglund, and Derick,[19] it would appear that such increased estimates of the normal value rest on experimental evidence that points to an individual and relative "unsensitivity" of the kidney for uric acid, so that each person tends to carry his own level of this

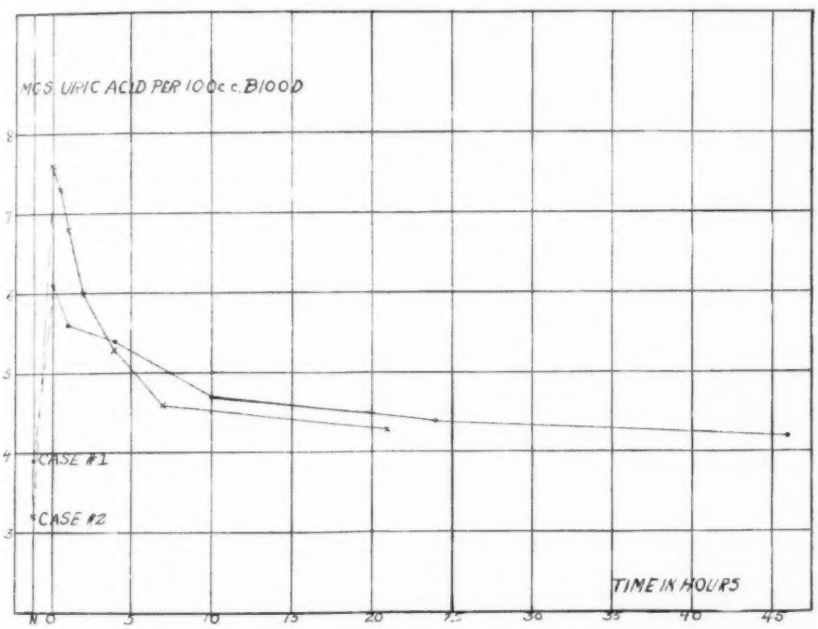


Chart 2.—Effect of intravenous lithium urate injections on the uric acid blood content in two patients with eczema.

metabolite. The amount of circulating uric acid is not always constant, as it is influenced, it would seem, by other factors; and it has been brought out (Gudzent) that fluctuations of the blood uric acid content are to be found from time to time in the same person.

17. Gudzent, F.: Die Harnsäure Problem in der Medizin, Ztschr. f. klin. Med. **99**:20, 1924.

18. Berglund, H.: The Relationship Between Uric Acid and Gout, M. Clin. N. Amer. **8**:1635 (March) 1925.

19. Folin, O.; Berglund, H., and Derick, C.: The Uric Acid Problem, J. Biol. Chem. **60**:361 (June) 1924.

Another question may be discussed appropriately here; that is, the interpretation of the clinical improvement achieved by a purin-free diet, with its consequent reduction of the amount of circulating uric acid. While there is no doubt that improvement is obtained in some cases by this dietary regimen, a fact which I can verify from personal experience, it is doubtful that the effect is due to the reduction of uric acid alone. Conceivably, a purin-free diet may influence skin diseases in other ways than by its influence on the uric acid content of the blood and tissues.

Again, the fact that the most recent authoritative investigation of the behavior of injected uric acid (Folin, Berglund, and Derick) lead to the conclusion that the major tissues, with the exception of the kidney, are impermeable to uric acid and that uric acid figures for the blood are not indexes of the tissue content, make hazardous inferences based on blood estimations of this metabolite. In this connection, I wish to mention that Schamberg and Brown, Pulay and others, whose work appeared before that of Folin and his collaborators, had naturally proceeded on the then universally accepted assumption that the uric acid blood and tissue content were practically in equilibrium.

INTRADERMAL INJECTIONS OF URIC ACID, UREA, AND CREATININE SOLUTIONS

Technic of Injections.—Using thoroughly cleansed tuberculin syringes, sterlized by boiling, and dried, 0.1 cc. of solution was injected intradermally. The injections were usually made on the flexor surfaces of the forearms; occasionally, the flexor surfaces of the arms were selected. The injections produced an immediate white wheal, quickly surrounded by a wide erythematous halo. In a number of early cases, this immediate reaction was watched for from one to two hours, but nothing definite could be deduced from its behavior. The effect of the injection was read at the end of twenty-four hours; but many cases were inspected at intermediate intervals.

Besides the intradermal injections, a number of persons were tested by scarification and the contact method (Jaeger's), but in no instance did these methods cause any reaction.

The results were recorded as negative, plus-minus, one plus and two plus. The one plus indicated a moderate erythema over 1 cm. in diameter; two plus a more marked erythema than the foregoing; while the plus-minus indicated any reaction that showed the slightest deviation in the way of erythema greater than the control. I believe that the plus-minus reaction should be ignored.

Solutions.[20]—During the duration of the study, a number of dilutions of pure uric acid and lithium urate were employed. These include 5 mg., 3.5 mg. and 2 mg. of uric acid per hundred cubic centimeters of distilled water, and 0.12, 0.25, 0.5 and 1 per cent strengths of lithium urate. Lithium urate was prepared according to the directions of Folin, Berglund and Derick. Urea solutions in strengths of from 1 per cent to saturation were used. Creatinin solutions were either of 1 mg., 3.5 mg. or 100 mg. per hundred cubic centimeters of distilled water. The

20. The preparations of the solutions and chemical controls on them were done by H. O. Nicholas, Ph.D., department of chemistry, Rice Institute, Houston, Texas. He also assisted me in the biochemical aspects of the subject.

control test was distilled water. The test solutions were kept in sealed 1 cc. glass ampules. Sterilization of the uric acid and creatinine solutions was accomplished by autoclaving; in the case of urea, by Berkefeld filtration. Small batches of the test solutions were made up at a time, and samples from these were tested at appropriate intervals for their chemical content and for sterility.

It is to be understood that the different strengths of the solutions mentioned above were not employed on every individual. The actual number of injections made will appear later.

Each of these metabolites is practically neutral in distilled water. The 1 per cent lithium urate and 10 per cent urea solutions are practically isotonic with the blood; the hypotonicity of the other solutions was controlled by the distilled water control, which also checked the traumatic element.

Results.—One hundred and twenty persons have been tested for skin reactions to these metabolites. Of this number, sixty-three were patients with eczema, four with localized pruritus, two with generalized pruritus, six with psoriasis, and the remainder were affected with dermatophytosis, acne vulgaris, urticaria, dermatitis seborrheica and lichen planus. Included in the total number tested were twenty-one persons without skin diseases.

The patients with eczema and pruritus ranged in age from 3 to 70 years; the majority were in the third and fourth decades of life. Each of the types of eczema were included, but no distinction was made between eczema of exogenous and of endogenous origin. However, there were twelve cases of eczema in the series in which an external origin was fairly well established.

Each person of the 120 mentioned above was tested for skin irritability to uric acid. Actually, 107 tests were made with the 1 per cent lithium urate solution; fifteen with the 0.5 per cent and thirty-two with the 0.25 per cent strengths. With 5 mg., 3.5 mg., and 2 mg. uric acid per hundred cubic centimeters of distilled water, thirty-six, twenty-seven and twenty-seven tests, respectively, were performed. With urea solutions (1 per cent and over) seventy-seven persons were tested, while with the creatinine solutions twenty-three persons were studied.

Thirteen patients showed irritative phenomena. Of these there was a case each of psoriasis, acne vulgaris, and local pruritus; the remainder were cases of eczema. Six of these reactions were of the plus-minus variety, and may be disregarded. Of the seven remaining, in three the control was also positive, in one a retest gave negative results, in two paradoxic [21] results were obtained and in one alone was the result unimpeachable, although in this instance no retest was made. This person gave a mild erythematous reaction to 1 per cent lithium urate solution.

21. By paradoxic result, I mean a positive result in a weaker dilution of the metabolite and none in the stronger; a positive in the middle one of three different concentrations of the same metabolite, as these two subjects showed.

The irritative phenomena produced in these instances, with the possible exception of the last one, were undoubtedly of the nonspecific type, such as occurs in intradermal injection tests of different kinds (allergic tests, etc.). What makes these results all the more impressive is the fact that only exceedingly concentrated solutions produced reactions—concentrations far greater than can possibly occur in the human body.

PHOTOSENSITIZATION TESTS

Tests to determine the photosensitizing properties of these metabolic products were performed, because it is conceivable that they possess such action. Indeed, as previously mentioned, Pulay has suggested this property for uric acid. In this connection mention may be made of the case reported by Grøn [22] of a man with gout who had an extraordinary sensitivity to sunlight. Grøn suggested, admittedly as a pure hypothesis, that the increased circulating uric acid may have acted as a photosensitizing substance.

Before detailing the technic and results of these tests, I wish to refer briefly to those phases of the subject of photosensitivity which have direct application to this study.

Photodynamic effects are produced only by substances that fluoresce, and these substances produce their effects by the absorption of wave lengths that are characteristic for the substance in question; in other words, unless light is absorbed there can be no photochemical effect.

Among photodynamic substances are certain metabolic products: sugar, lactic acid, urea and others.[23] Human skin is fluorescent, and is most penetrable to rays around 600 millimicrons and absorbs best those around 300 millimicrons, according to Bernhardt.[24] I may further mention that the skin of eczematous persons is more fluorescent than that of the noneczematous, and this increased fluorescence may have some relation to its greater sensitivity (Dixon [25]).

In carrying out these tests, simultaneous symmetrical intradermal tests were made on each forearm; one was exposed to ultraviolet light and the other protected by black photographic paper. The source of ultraviolet light was an air cooled mercury-vapor lamp, run at 5 amperes, at a distance of 16 inches (40.5 cm.) from the skin. The time of exposure was two and one-half minutes. In addition to the intradermal test, tests were made in twelve patients by excoriating the

22. Grøn, F.: Heftige Lichtdermatitis bei Einwirkung von Sonnenlicht, Acta Dermat. **4**:53, 1923.

23. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company, 1925, p. 417.

24. Bernhardt, F.: Die Lichtdurchlassigkeit der menschlichen Haut und ihre Beziehung für Absorptions des Lichtes, München med. Wchnschr. **71**:427, 1924.

25. Dixon, W. E.: The Therapeutic Action of Light, Brit. M. J., Sept. 19, 1925.

skin with a von Pirquet borer, and rubbing the solution into the abrasion. In eight instances, in which both injections and abrasion tests were made, the test sites were exposed to bright sunlight for five minutes subsequent to the ultraviolet light exposure.

It is believed that the conditions of the tests were sufficiently exact, granting certain limitations, to allow for deductions from the results obtained.

In every instance tests were performed with solutions of lithium urate (1 per cent), urea (10 per cent) and the majority with creatinine (100 mg. per hundred cubic centimeters of distilled water). In addition, many tests were made with the various dilutions mentioned in the preceding section.

In all, fifty-three persons were investigated. The series comprised thirty-one cases of eczema, one of cutaneous pruritus, three of dermatophytosis, seven of acne vulgaris, four of psoriasis, three of lichen planus and four normal persons.

Only three showed evidence of an irritative effect; that is, the tests subjected to light developed appreciably stronger effects than the unexposed ones. In one of these cases the result was undoubtedly factitial, since the control (distilled water) was also erythematous. Of the remainder, one developed a plus-minus effect on the urea control, and a one plus reaction on the urea test subjected to ultraviolet light. The other gave a one plus result of the urea test, with no response on the control. None of these reactions was more than pinkish and without exudation or induration. The creatinine tests gave completely negative results.

The two apparently positive results occurred in cases of eczema: one of generalized papular type, the other a vesicular variety limited to one hand, and probably of exogenous origin. This patient was the same one who gave the only positive result with the simple intradermal tests. She had a blood uric acid content of 3.4 mg. and a urea nitrogen level of 14.01 mg.[26]

The two positive tests must be accepted as showing, in these instances, moderate dermal reactions to concentrated solutions of urea developing only after exposure to ultraviolet light. Naturally, a second test in these cases was desirable, but unfortunately, was unobtainable.

INTRAVENOUS INJECTIONS OF LITHIUM URATE SOLUTIONS

Before mentioning the results obtained by intravenous injections of lithium urate solutions, it is appropriate to review briefly current knowl-

26. Testut (Rev. méd. de l'est **52**:818, 1924) mentions the association of increased blood urea with eczema, but in twenty-nine cases of this disease I have found no instance of an increased blood content of this metabolite. In view of the observations recorded herein, I believe the association must be fortuitous.

edge of the behavior of injected uric acid, since it has an important bearing on the subject under discussion. For a complete review of the earlier studies, the article by Folin, Berglund and Derick [19] may be consulted. Until these investigators announced their results, it was generally believed that injected uric acid behaved as do other metabolites, that is, that it diffused from the blood into the tissues until an equilibrium was established.

The studies of Gudzent [27] apparently demonstrated that injected urate (in this instance, the monosodium salt) diffused into the tissues, was held therein for several hours, and then again reappeared in the blood and was eliminated by the kidney. Gudzent's recoveries of uric acid were high in normal persons (80 to 100 per cent), low in gout and midway between the two in alcoholism, chronic interstitial nephritis and other conditions.

Folin, Berglund and Derick, on the other hand, dispute the statement that injected uric acid escapes from the blood into the tissues. They found the major tissues, except the kidneys, impermeable to uric acid. Injected uric acid is destroyed in the blood in part and eliminated by the kidneys in part. The speed of destruction varies, and "each individual tends to carry his own level of circulating uric acid."

It would appear from this extensive investigation that uric acid manufactured in the tissues is excreted into the blood, and that no matter what the level of uric acid in the blood, the tissues do not again take it up. The blood level of uric acid is neither an expression of increased production nor of tissue content, but of the kidney threshold of elimination for uric acid.

If Gudzent is correct, the intravenous injection of uric acid causes an increased tissue content of this substance, and if it has irritant properties, these should be expressed by enhancement of subjective symptoms. Whereas if Folin and his collaborators are correct, the injection of uric acid should cause no changes in symptoms, since there would be no increase in tissue uric acid. Of course, the effect might be secondary through changes in other metabolic processes, but this assumption becomes too hypothetical for practical consideration.

Pursuant to the foregoing line of thought, lithium urate was injected intravenously into two persons with eczema for the purpose of observing the objective or subjective effects evoked. A summary of the results obtained follows.

REPORT OF CASES

CASE 1.—A man, aged 60, suffered from a severe generalized eczema for a number of years that ran a course with remissions and exacerbations. The disease was papular with a tendency to exudation. The patient had been under observation for more than a year.

---

27. Gudzent, F.: Experimentelle Beitrage zur Pathogenese der Gicht, Ztschr. f. klin. Med. **90**:147, 1920-1921.

At the time of the injection he had a severe, acute, erythematopapular outbreak on the face, with milder manifestations on the lower extremities. The only other noteworthy finding was chronic interstitial nephritis. An external cause for the eczema had been excluded as carefully as possible.

He was admitted to Hermann Hospital, Feb. 26, 1926, and put on a purin-free diet. No local treatment was given during the observation period. An injection of 1 Gm. of lithium urate in 1 per cent solution was made on February 30. Chart 2 shows that the blood uric acid before injection was 3.9 mg.; it rapidly rose to 6.1 mg., and remained above 4 mg. for forty-eight hours.

During this period and for a week following he was closely observed. There was no discernible objective or subjective change in the symptoms of eczema.

CASE 2.—A man, aged 30, with an extensive, at one time nearly universal, eczema of vesicular type, had been under observation for more than a year. At the time of the injection the eczema involved the entire surface of each lower extremity to the mid-thigh. Exudative patches were present on the face and scattered groups of minute papules on the body. The type was vesicopapular in a subacute stage. In this patient also an occupational or other external cause was not discoverable.

An injection was made on Feb. 7, 1926. Fourteen hundred and forty-four milligrams of uric acid in the form of a 1 per cent lithium urate solution was injected (22 mg. per kilogram of body weight). The uric acid blood level was 3.2 mg. before the injection (he had been on a purin-free diet for two weeks) and rapidly mounted to 7.6 mg., falling steadily to 4.3 mg. in twenty hours, after which no more blood estimations were made (chart 2). Close observations during this period and for several days following showed no change in the objective or subjective symptoms of the disease. During the observation period no local medication was permitted.

I have not given total recoveries of uric acid, speed of elimination, etc., because the behavior of injected uric acid is being studied in collaboration with O. H. Nicholas, Ph.D., of the department of chemistry of Rice Institute, and these data, which have no particular bearing on the present question, will be published on the completion of this joint investigation.

Comment.—These cases, purposely chosen because of their severity, show that artificially raising the level of circulating uric acid for at least twenty-four hours does not influence the subjective or objective symptoms of the disease.

CONCLUSIONS

Blood estimations of uric acid in eczema and kindred disorders are of doubtful value as evidence of a uratic pathogenesis of some cases of these diseases.

The improvement in eczema following institution of a purin-free diet can be construed in other ways than by its effect on the blood uric acid content.

Uric acid, urea and creatinine are not dermal irritants. In two persons, a moderate erythematous reaction was evoked, but only to concentrated solutions of uric acid and urea.

These metabolites have no demonstrable photosensitizing effects, or, at least, render the human skin mildly photosensitive only in a very small number of persons, and then only when in strong concentration.

Increasing the uric acid content of the blood by injections of lithium urate intravenously in two cases of severe, acute eczema produced no change in the subjective or objective symptoms of the disease.

313 Second National Bank Building.

DISCUSSION

Dr. Walter J. Highman, New York City: It is a great pleasure to me to have heard this paper, because it completely falls in line with what I have so long imagined to be the relationship of metabolic disorders to the disease still called eczema. It seems to me that Dr. Michael has taken the one method that was open to him, and the logical one, to disqualify, within the limits in which it can be disqualified for the theme in question, the test tube. I see that throughout the country a fetish is being made of the test tube, and all fetishes are misleading.

As to the uric acid coefficient, I am informed by students of chemistry that each person has his own peculiar uric acid level. Whether it be 7.2 or 2.7, this is as characteristic to the person as is his nose. If this is true, we must accept all statistical studies with a grain of salt. A paper which deals with this side of the work was published last year from Philadelphia, in which the preponderance of the patients with raised uric acid figures did not have eczema, or the eczema was not in evidence in the presence of those with raised coefficients. It has always seemed to me that in work of this sort we have to follow out our syllogism in some such way as this: Given a biochemical disturbance, it is necessary to check up on it by determining whether the disease supposed to be associated with it can be produced, or increased in severity, or otherwise modified by modifying the metabolic groundwork, or by producing the disease in animals. This sort of thing, which is analogous to Koch's rules in infectious diseases, has never been done. Furthermore, in my practical experience, I have never seen any beneficial result in eczema from guiding the diet and other body functions according to leads based on laboratory observations.

Dr. Michael has divorced himself from the test tube. He has tried to make the cutaneous tests practical, and the result is negative. This is the kind of work which is convincing, for in my opinion further work, either by Dr. Michael or other investigators, will substantiate his results, and it will be a great pleasure to me to see test tube worship put into the obscurity which it deserves.

Dr. Samuel Ayres, Jr., Los Angeles: It is a great pleasure to listen to a paper which is an attempt to clarify the etiologic obscurity of some of the common skin conditions. Essayists so frequently describe the investigation of the more rare conditions, which, of course, is of great value; but there are a few disorders that make up our daily practice, and to pass over the investigation of some of these more common conditions is regrettable. I think Dr. Michael's work deserves great credit.

As to our work in eczema, most of us have been paying particular attention to the metabolic disturbances. I wish to call attention, however, to some recent observations which I believe deserve careful consideration, that is, a focus of irritation originating in the vegetative nervous system. Alvarez has shown definitely that all of the symptoms of so-called autointoxication, including careful laboratory determinations of reaction time, blood pressure, etc., can be produced by dilatation of the lower bowel. This was tested by some medical students who had their rectums packed with cotton pledgets. Immediately all of the symptoms of autointoxication developed. On withdrawal of the cotton pledgets the symptoms promptly disappeared. If all of the symptoms of autointoxication can be

produced by mechanical dilatation of the intestine, I see no reason why similar vasomotor changes cannot take place in the skin from similar causes. A woman with almost universal eczema of about ten years' duration, with a thick, leathery, lichenified skin, who was also asthmatic, and on whom all the cutaneous protein tests had been made with negative results, became the patient of Dr. Laurence K. Gundrum, a former student of Dr. Sluder's. He found that the asthmatic attacks were relieved by cocainizing the sphenopalatine ganglion. Dr. Gundrum then injected the ganglion with alcohol, and found that he had cured not only the asthma but also the eczema. It seems absurd that a long-continued eczema could result from the stimulation of one nerve ganglion, but the facts in this case strongly suggest such a hypothesis. There has been no return of the eczema during the year and a half since the treatment, although during the last few months the patient has had some asthma. I think the idea of a "focus of irritation" originating in the vegetative nervous system deserves a little attention in our attempts to uncover the etiology of eczema.

THE BEHAVIOR OF INJECTED URIC ACID IN PATIENTS WITH ECZEMA*

JEFFREY C. MICHAEL, M.D.
AND
HENRY O. NICHOLAS, PH.D.
HOUSTON, TEXAS

INTRODUCTION

In a previous article, Michael[1] reported a study of the relation of uric acid to eczema. In that article, two cases of eczema were reported in which intravenous injections of lithium urate were given. The purpose of the intravenous injection procedure was twofold: first, to determine the effect on the symptoms of the disease of artificially raising the blood uric acid content; and, second, to study the fate of injected uric acid in this disease. As disturbance of uric acid metabolism has been considered an important cause of eczema, it seemed worth while to determine whether patients with eczema actually showed any significant variation from the normal in their behavior to injected uric acid. The present report, therefore, is chiefly concerned with this biochemical phase of the question. In that respect it amplifies and supplements the previous report.

We have carried out this study on five patients, three in addition to those previously reported; and although we realize that such a small number of cases precludes definite conclusions, we believe that the results of this study allow inferential deductions of value.

The literature concerning the effect of injected uric acid has been reviewed in the previous article,[1] and will be amplified only in those parts directly referable to the present study. We recall the diametrically opposing views on this question held by Folin and his collaborators[2] and by Gudzent.[3] The former believe that injected uric acid is destroyed in part in the blood, and that that portion which escaped destruction is eliminated chiefly by the kidneys. They also believe that injected uric acid is never taken up by the tissues. These investigators recovered from 30 to 90 per cent of the injected uric acid in normal persons. On

* Contribution from the Baptist and Hermann Hospitals, and the Department of Chemistry of the Rice Institute, Houston, Texas.

1. Michael, J. C.: Critical Investigation of the Relation of the End-Products of Protein Metabolism to Eczema and Kindred Disorders, to be published.

2. Folin, O.; Berglund, H., and Derick, C.: The Uric Acid Problem, J. Biol. Chem. **60**:361, 1924.

3. Gudzent, F.: Experimental Beitrage zur Pathogenese der Gicht, Ztschr. f. klin. Med. **90**:147, 1920-1921.

the other hand, Gudzent concluded that injected uric acid is retained in the tissues; but after a certain period of retention it is eliminated by the various emunctories, chiefly the kidneys. This investigator denied, as did practically all others before him, the possibility of uric acid destruction in the human organism. Since Gudzent's recoveries of injected uric acid were high, ranging from 80 to 110 per cent, his conclusions of nondestructibility are evident.

The results obtained by Koehler [4] partly confirmed those of Folin and his associates, although he did not discuss the question of the permeability of the tissues to uric acid. On the other hand, Lennox [5] concluded from his data on fasting patients that a considerable amount of uric acid is retained in the tissues during the fasting period. However, the results he obtained from an intravenous injection of piperazine solutions of uric acid were, as he stated, "too few, and the 48 hour observation period too brief to prove whether the uric acid injected during fasting was retained in the tissues or destroyed."

We do not purpose to attempt a solution nor even offer a critical comment on this subject; our effort has been directed along different lines. But, since the inferences rest in part on a knowledge of the behavior of injected uric acid, we have been forced to record briefly the present status of the subject. The information elicited from the five patients studied will now be recorded.

EXPERIMENTAL WORK

Preparation of Uric Acid Solution.—This solution was prepared according to the method of Folin,[3] with slight modifications. Exactly 0.4 Gm. of lithium carbonate (U.S.P.) was dissolved in 100 cc. of freshly distilled water. This solution was then placed in a large 125 cc. ampule, sealed and sterilized. Just before the time of the injection, 1 Gm. of pure uric acid [6] (which had been previously sterilized by dry heat, 110 C. for two hours) was added, and solution effected by warming to about 60 C. The solution of lithium urate was then allowed to cool to body temperature and injected. The solution thus prepared was neutral to phenolphthalein.

Methods of Blood and Urinalysis.—The oxalated blood was prepared for analysis by obtaining the protein-free blood filtrate according to the method of Folin and Wu.[7] The uric acid determinations on the blood filtrate were made according to the method of Benedict.[8] The uric acid determinations on the urine

4. Koehler, A. E.: Uric Acid Excretion, J. Biol. Chem. **60**:721, 1924.

5. Lennox, W. G.: Uric Acid Retention During Fasting, J. Biol. Chem. **66**:521, 1925.

6. From Eastman Kodak Company.

7. Folin, O., and Wu, H.: A System of Blood Analysis, J. Biol. Chem. **38**:81, 1919.

8. Benedict, S. R.: The Determination of Uric Acid in Blood, J. Biol. Chem. **51**:187, 1922.

were made according to the method of Benedict and Franke.[9] In all colorimetric readings the dilutions were so made that the readings of the unknown and the standard were within ten units of each other.

Preparation of the Patient.—In all cases the patient was put on a purine-free diet for at least four days before the experiment was performed, and when possible was also placed in a hospital during that time. No local treatment was given during this period, nor during the course of the experiment.

CASE 1.—In a man, aged 60, with generalized eczema of a severe acute, erythematopapular type, the only other noteworthy finding was chronic interstitial nephritis.[1]

Table 1 gives the data obtained in this case. On account of the age and kidney condition of the patient, he was given but 1 Gm. of uric acid. He was admitted to Hermann Hospital, Jan. 26, 1926, and immediately placed on a purine-

TABLE 1.—*Results of Uric Acid Injection in Case 1* *

		Urine				
			Uric Acid			
Time, Jan.-Feb., 1926	Blood, Uric Acid per 100 Cc., Mg.	Volume, Cc.	Per Sample, Mg.	Per 24 Hours, Mg.	Rate per Hour, Mg.	Remarks, Since January 26 on Purine-Free Diet
30	...	1,730	...	457	..	Average endogenous uric acid; 410 mg.
31	...	1,275	...	370	..	
9 : 30 a. m.	3.9	290	72	...	48	
9 : 30-43 a. m.	...	.....	...	...	..	1 Gm. of uric acid intravenously
9 : 47 a. m.	6.1	.....	...	...	..	
10 : 45 a. m.	5.6	.....	...	...	..	
1 : 15 p. m.	...	115	92	...	28	
1 : 45 p. m.	5.4	.....	...	...	..	
7 : 45 p. m.	4.7	.....	...	...	..	
8 : 00 a. m.	...	1,025	615	...	32	Uric acid recovered: 369 mg. = 37%
				779		
1	4.4	.....	...	...	..	369 mg. = 37%
2	4.2	830	...	423	..	13 mg. = 1%
3	3.6	870	...	348	..	
4	3.6	1,800	...	423	..	382 mg. = 38%

* The patient was 60 years old and weighed 158 pounds (71.7 Kg.).

free diet. On the two days preceding the experiment, urinalyses were made to determine the average endogenous uric acid output for the normal twenty-four hour period (8 a. m. to 8 a. m.). The data show that the blood uric acid level was 3.9 mg. just before the injection, rose to 6.1 mg. at four minutes after finishing the injection, and then gradually fell during the following seventy-two hours to a level below the normal. During the first twenty-four hour period he excreted 369 mg. of uric acid over and above the normal output; and during the second twenty-four hour period he excreted 13 mg. more. These values represent a total recovery of 382 mg. or 38 per cent, and therefore correspond to a 62 per cent destruction, according to Folin. During this period and for the week following he was closely watched. There was no discernible objective or subjective change in the symptoms of eczema.

CASE 2.—A man, aged 34, had an extensive subacute eczema of a vesicopapular type.

9. Benedict, S. R., and Franke, E.: A Method for the Direct Determination of Uric Acid in Urine, J. Biol. Chem. **52**:387, 1922.

Table 2 gives the data obtained in this case. The patient had been on a purine-free diet for two weeks, but had not been admitted to the Baptist Hospital until 7 a. m. on the morning of the experiment (Feb. 7, 1926). He had previously been instructed to save twenty-four hour urine samples for the two days preceding the experiment, which were analyzed to determine the average endogenous uric acid output. The uric acid blood level was 3.2 mg. before the injection and rapidly rose to 7.6 mg. four minutes after the injection was finished. This level gradually dropped during the next twenty hours to 4.3 mg. During the twenty-four hour period of the experiment he excreted 506 mg. over and above the normal level, which represents a recovery of 35 per cent. Due to unavoidable circumstances, we were unable to carry the experiment further. The patient was, however, under close observation during the period following and showed no change in the objective or subjective symptoms of the disease.

TABLE 2.—*Results of Uric Acid Injection in Case 2**

		Urine				
			Uric Acid			
Time, February, 1926	Blood, Uric Acid per 100 Cc., Mg.	Volume, Cc.	Per Sample, Mg.	Per 24 Hours, Mg.	Rate per Hour, Mg.	Remarks, Since January 24 on Purine-Free Diet
6	...	1,050	...	525	..	} Average endogenous uric
7	...	1,580	...	450	..	} acid; 487 mg.
9 : 00 a. m.	...	225	79	...	40	
9 : 45 a. m.	3.2	.....	...	...	..	
10 : 00-13 a. m.	...	.....	...	...	..	1.44 Gm. of uric acid intravenously
10 : 17 a. m.	7.6	.....	...	...	..	
10 : 50 a. m.	7.3	.....	...	...	..	
11 : 20 a. m.	6.8	.....	...	...	..	
11 : 33 a. m.	...	330	195	...	130	
12 : 20 p. m.	6.0	.....	...	...	..	
2 : 20 p. m.	5.3	.....	...	...	..	
2 : 35 p. m.	...	400	176	...	58	
5 : 20 p. m.	4.6	.....	...	...	..	
5 : 35 p. m.	...	475	176	...	58	
8 : 45 p. m.	...	490	172	...	54	
7 : 55 a. m.	4.3	390	195	...	17	Uric acid recovered:
				993		506 mg. = 35%

* The patient was 34 years old and weighed 135 pounds (61.2 Kg.).

CASE 3.—A man, aged 34, who had been under observation for about two years, had attacks of papular eczema which persisted for several months at a time and responded slowly to therapy. The disease occurred principally on the face, neck and forearms. At the time of the injection, the disease had been present for several weeks. On the face it consisted of macules and a few vesicopapules, while on the neck and upper extremities grouped vesicopapules predominated. The stage was subacute. Itching was intense. He had been on a purine-free diet for two weeks prior to the injection. Three days before the injection he was given 5 cc. of boiled milk intramuscularly. This was followed by malaise, headache and fever up to 100.5 F., which subsided within twenty-four hours. A thorough study by a competent internist revealed no noteworthy abnormalities.

Table 3 gives the data obtained in this case. The patient was admitted to the Baptist Hospital the morning of the experiment (Feb. 28, 1926). He had, under instructions, saved a twenty-four hour urine specimen for control, which on analysis showed 840 mg. of uric acid. This high value was probably due to the fever resulting from the milk injection. Since it was advisable to proceed with the experiment at this time, this result was laid aside until a later date for

confirmation. Accordingly, two weeks after the date of the experiment the patient was again placed on a purine-free diet for four days, and two samples of urine were collected for controls. The uric acid blood level rose from 4 to 10 mg. taken four minutes after finishing the injection. It then dropped rapidly during the following twenty-four hours to 4.7 mg.; but at the end of the next twenty-four hour period it had risen slightly. Based on the amount of endogenous uric acid determined from the later samples of urine, the recovery of uric acid in this case was, on the two days following, 218 and 40 mg., corresponding to a total recovery of 18 per cent. Close observation of the patient during the experiment and during the period following showed no change in the objective or subjective symptoms of the eczema.

Case 4.—A man, aged 51, had had the present skin disease for about one year. There was moderate itching. At the time of the injection he had nummular,

Table 3.—*Results of Uric Acid Injection in Case 3* **

Time, Feb.-March, 1926	Blood, Uric Acid per 100 Cc., Mg.	Urine: Volume, Cc.	Urine: Uric Acid: Per Sample, Mg.	Urine: Uric Acid: Per 24 Hours, Mg.	Urine: Uric Acid: Rate per Hour, Mg.	Remarks, Since February 14 on Purine-Free Diet
28	...	2,000	...	840	..	
†	...	1,550	...	542	..	Average endogenous uric acid; 402 mg.
†	...	1,460	...	263	..	
9 : 15 a. m.	...	190	25	...	11	
9 : 40 a. m.	4.0	.....	...	...	..	
9 : 45-55 a. m.	...	.....	...	...	..	1.45 Gm. uric acid intravenously
9 : 59 a. m.	10.0	.....	...	...	..	
11 : 00 a. m.	7.6	170	114	...	91	
1 : 00 p. m.	...	625	237	...	118	
3 : 00 p. m.	5.7	.....	...	...	..	
3 : 20 p. m.	...	165	87	...	37	
6 : 20 p. m.	...	170	52	...	17	
8 : 00 p. m.	5.3	.....	...	...	..	
8 : 10 p. m.	...	500	105	...	58	
8 : 00 a. m.	...	No urine voided				
				620		Uric acid recovered: 218 mg. = 15%
1	4.7	.....	...	...	..	
2	5.0	2,600	...	442	..	40 mg. = 3%
						258 mg. = 18%

* The patient was 34 years old and weighed 145 pounds (65.8 Kg.).
† See description of this case.

scaly, moderately infiltrated patches on each leg. They were a deep red and fairly well marginated. A general physical examination revealed no definite abnormalities, and routine laboratory reports showed no deviation from the normal. The diagnosis was chronic, squamous eczema.

Table 4 gives the results obtained in this case. The patient had been on a purine-free diet for six days, having been admitted to the Hermann Hospital on March 25, 1926. The average endogenous uric acid in one twenty-four hour specimen was taken as a control. The uric acid blood level rose from 4.5 mg. before the injection to 8.4 mg. four minutes after. It then gradually fell to 5.0 mg. at the end of 72 hours. The patient excreted 471 mg. of uric acid during the twenty-four hours following the injection, which corresponds to a 33 per cent recovery. During the second twenty-four hour period no excess uric acid was excreted. Close observation again revealed no objective or subjective change in the symptoms of the disease.

CASE 5.—A negro, aged 73 (but who appeared to be about 60 years old), had arteriosclerosis of moderate degree, and a blood pressure of 180 systolic and 94 diastolic. Besides these observations, the only other noteworthy feature was a palpable liver border which extended 3 cm. below the costal margin. The results of urinalysis, as well as of other routine examinations were normal. The skin disorder was generalized and consisted of moderately infiltrated, scaly patches on the external aspects of the forearms, the areas adjacent to the axillae, and the lateral surfaces of the trunk. The patches on the forearms had, in part, become lichenified. The disease had been present continuously for at least six months, and the patient had been under observation for about one month. The eruption itched intensely at times. The diagnosis was erythematosquamous, chronic eczema.

Table 5 gives the results obtained in this experiment. From an initial level of 7 mg. the blood uric acid content rose to 10.7 mg. four minutes after finishing

TABLE 4.—*Results of Uric Acid Injection in Case 4* *

Time, March-April, 1926	Blood, Uric Acid per 100 Cc. Mg.	Urine				Remarks, Since March 25 on Purine-Free Diet
		Volume, Cc.	Uric Acid			
			Per Sample, Mg.	Per 24 Hours, Mg.	Rate per Hour, Mg.	
30	...	2,720	...	535	..	Average endogenous uric acid; 535 mg.
8 : 30 a. m.	4.5	.....	...	...	..	
8 : 56-9 : 04 a. m.	...	.....	...	...	..	1.4 Gm. uric acid intravenously
9 : 08 a. m.	8.4	.....	...	...	..	
10 : 00 a. m.	6.9	.....	...	...	..	
11 : 00 a. m.	...	340	109	...	55	
12 : 00 n.	...	350	105	..	105	
1 : 00 p. m.	6.7	.....	...	...	..	
1 : 40 p. m.	...	460	156	...	94	
2 : 40 p. m.	...	460	101	...	101	
3 : 30 p. m.	...	400	60	...	72	
4 : 40 p. m.	...	500	75	...	66	
6 : 00 p. m.	...	430	86	...	64	
7 : 00 p. m.	...	430	73	...	73	
8 : 10 p. m.	...	360	54	...	47	
9 : 00 p. m.	...	400	52	...	62	
6 : 15 a. m.	...	340	92	...	10	
9 : 00 a. m.	5.7	130	43	...	15	
				1,006		Uric acid recovered: 471 mg. = 38%
1	5.3	3,430	...	526	..	
2	5.0	.....	...	...	..	

* The patient was 51 years old and weighed 138 pounds (62.6 Kg.).

the injection. This high level gradually dropped during the next four hours to 8.7 mg. During the afternoon, the patient had a chill followed by a temperature of 102.6 F. At 6:30 p. m., the blood level had risen to 9.2 mg. At 8:30 a. m. the following morning, the temperature was normal, and headache and other symptoms had disappeared. The skin disease appeared better, and the itching had ceased. The improvement was more manifest the next day; the itching had entirely ceased, and the lichenified areas were less infiltrated. Several factors may have been responsible for the improvement of the skin condition—rest, diet, etc.—and it is possible that the injection precipitated a reaction which acted in a manner similar to a foreign protein shock. This was the only patient who developed a reaction to the uric acid injection.

The data on the excretion of uric acid in this case is incomplete. The patient excreted a total of 96 mg. from the time of the injection until 6:30 p. m. that

night. During the night and the following morning the patient asserted that he did not void any urine, but the hospital report seemed to indicate that the specimens were lost. The three specimens collected at one, four and one-half and ten hours after the injection showed a very low uric acid excretion as compared to that in the other four cases. The analysis of the twenty-four hour sample following showed a uric acid content of about 100 mg. lower than that of the control.

COMMENT

In the five cases here recorded, it has been shown definitely that artificially raising the blood uric acid level by intravenous injection of this metabolite has produced no enhancement of subjective or objective symptoms of eczema. As a matter of fact, in case 5 this procedure was succeeded by definite improvement. In this instance the injection was

TABLE 5.—*Results of Uric Acid Injection in Case 5* *

Time, May, 1926	Blood, Uric Acid per 100 Cc., Mg.	Urine				Remarks, Since May 13 on Purine-Free Diet
		Volume, Cc.	Uric Acid			
			Per Sample, Mg.	Per 24 Hours, Mg.	Rate per Hour, Mg.	
18	...	620	...	378	..	Average endogenous uric acid; 378 mg.
8 : 10 a. m.	7.0	.....	...	...	..	
8 : 22-32 a. m.	...	.....	...	...	..	1 Gm. of uric acid intravenously
8 : 36 a. m.	10.7	.....	...	...	..	
9 : 30 a. m.	9.5	65	52	...	52	
12 : 30 p. m.	8.7	.....	...	...	..	
1 : 00 p. m.	...	40	24	...	7	Chill and fever. Temperature 102.6 F.
6 : 30 p. m.	9.2	50	20	...	3.7	Urine samples lost during night period
19	8.4	.....	...	...	..	
20	9.4	710	...	284	..	
21	7.6	.....	...	...	..	

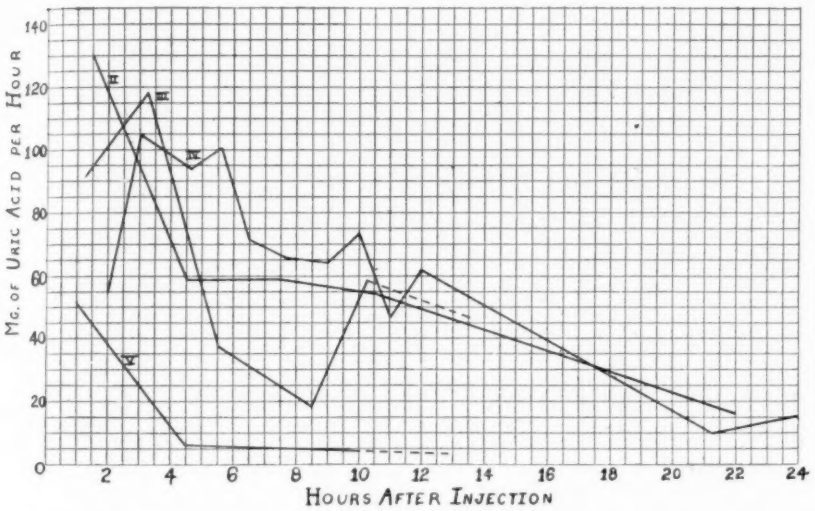
* The patient was 73 years old and weighed 130 pounds (59 Kg.).

followed by a chill and fever, and this may have been the important factor in the clinical improvement. Of course, other conditions such as rest and diet, may have entered the picture.

From the biochemical aspect, the blood uric acid data were in accord with the results obtained in normal persons by previous investigators. In every instance the injection was followed by an immediate rise in the blood uric acid level with a subsequent slow but steady fall, except in case 5, in which this uniform decline did not occur. In this case, the blood uric acid level may have been influenced by a febrile reaction which developed soon after the injection.

The total recoveries of uric acid varied within moderate limits, as was to be expected. Our recoveries are comparable to those of Folin and his collaborators for normal persons, except in case 5, in which

apparently none of the injected uric acid was eliminated. The elimination of uric acid is subject to considerable individual variation. The interpretation of the significance of total uric acid recovered following injection experiments is still a moot question. For these reasons no stress is laid on the uric acid recoveries in this small series. Indeed, Wells [11] has made the point that urine recoveries of uric acid are valueless indexes of the fate of injected uric acid, since this metabolite may escape in unknown and unascertainable amounts through the intestial wall.



Rate of excretion of uric acid at various periods after the injection. The data were obtained from cases 2, 3, 4 and 5. The broken lines indicate that the data for continuing the curves are lacking.

Regarding the rate of elimination of uric acid after the injection, the chart shows that the maximum rate occurs from one to three and a half hours after the injection, and that at no later period does the rate exceed the initial peak. There seems to be a gradual fall in the rate, and later increases probably are due to the ingestion of protein and carbohydrate foods.

Thus we conclude from the data obtained from these patients with eczema that they differ in no essential way from the results in normal persons recorded by other investigators.

313 Second National Bank Building—the Rice Institute.

11. Wells, H. G.: Chemical Pathology, ed. 5, Philadelphia, W. B. Saunders Company, p. 727.

News and Comment

FIFTIETH ANNIVERSARY MEETING OF THE AMERICAN DERMATOLOGICAL ASSOCIATION

The annual meeting of the American Dermatological Association this year celebrated the fiftieth anniversary of its founding. The Association was organized on Sept 7, 1876, at the University of Pennsylvania in Philadelphia at the close of the meeting of the Section of Dermatology and Syphilology of the International Medical Congress. The first annual meeting of the Association was held at Niagara Falls on Sept. 4-6, 1877, and meetings have been held every year with two exceptions, one year because of the International Dermatological Congress and once because of the war.

At the meeting this year, held on May 27-29, at the Bellevue-Stratford, Philadelphia, sixty active members were present. Dr. A. M. H. Gray of London, editor of the *British Journal of Dermatology and Syphilis,* was present as the guest of the Association and took an active part in the discussions. Four scientific sessions were held in which twenty-seven papers were read and discussed. One afternoon was devoted to the usual clinical meeting, when a number of unusually interesting cases were shown and discussed.

At the banquet on the first day Dr. George Henry Fox, the only living member who is a charter member, read a most interesting paper on "Early American Dermatologists." Dr. A. M. H. Gray brought the felicitations of the British Association of Dermatology and Syphilology and the Dermatological Section of the Royal Society of Medicine, and greetings from several foreign dermatologists were read. Following the dinner, Dr. Sutton entertained the members and ladies with lantern slides of photographs taken on his recent hunting trip in Indo-China.

The new members elected at this meeting were as follows: A. M. H. Gray (corresponding); Earl D. Crutchfield, Galveston; Harry R. Foerster, Milwaukee; Harther L. Keim, Ann. Arbor; Jeffrey C. Michael, Houston; Hiram E. Miller, San Francisco; Earl D. Osborne, Buffalo; and Isaac R. Pels, Baltimore.

The following officers were elected for the coming year: president, George M. MacKee; vice president, Otto H. Foerster; secretary-treasurer, C. Guy Lane.

The decision as to the time and place of the next meeting was left to the Council with a recommendation of Annapolis, Md.

NATIONAL DERMATOLOGICAL SOCIETIES

SECTION ON DERMATOLOGY AND SYPHILOLOGY, SCIENTIFIC ASSEMBLY, AMERICAN MEDICAL ASSOCIATION

James Herbert Mitchell, Chairman, 25 E. Washington St., Chicago
William H. Guy, Sec., Jenkins Arcade, Pittsburgh

AMERICAN DERMATOLOGICAL ASSOCIATION

George Miller MacKee, Pres., 200 W. 59th St., New York City
C. Guy Lane, Sec., 421 Marlborough St., Boston

LOCAL DERMATOLOGICAL SOCIETIES

MANHATTAN DERMATOLOGICAL SOCIETY

David L. Satenstein, Sec., 116 West 58th St., New York City.
Max Scheer, Chairman, 616 Madison Ave., New York City.

CHICAGO DERMATOLOGICAL SOCIETY

Paul A. O'Leary, Pres., Rochester, Minn.
F. E. Senear, Sec., 7 W. Madison St., Chicago.

NEW YORK DERMATOLOGICAL SOCIETY

A. Schuyler Clark, Pres., 614 Park Ave., New York City.
John E. Lane, Sec., 59 College St., New Haven, Conn.

NEW ENGLAND DERMATOLOGICAL SOCIETY

Henry J. Perry (deceased), Pres., 19 Bay State Rd., Boston.
Wesley T. Lee, Sec., 220 Clarendon St., Boston.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY AND SYPHILIS

Mihran B. Parounagian, Chairman, 126 E. 39th Street, New York City.
George C. Andrews, Sec., 121 E. 60th Street, New York City.

MINNESOTA DERMATOLOGICAL SOCIETY

Paul O'Leary, Pres., Rochester, Minn.
D. D. Turnacliff, Sec., Yeates Bldg., Minneapolis.

ST. LOUIS DERMATOLOGICAL SOCIETY

Robert H. Davis, Pres., Missouri Bldg., St. Louis.
Norman Tobias, Sec., 516 Metropolitan Bldg., St. Louis.

PITTSBURGH DERMATOLOGICAL SOCIETY

Lester Hollander, Pres., Jenkins Arcade, Pittsburgh.
Frederick M. Jacob, Sec., Jenkins Arcade, Pittsburgh.

DETROIT DERMATOLOGICAL SOCIETY

Howard J. Parkhurst, Pres., Toledo Medical Bldg., 312 Michigan St., Toledo, Ohio.
Ralph A. Perkins, Sec., 276 Erskine St., Detroit.

PHILADELPHIA DERMATOLOGICAL SOCIETY

John H. Stokes, Pres., 3800 Chestnut St., Philadelphia.
Carroll S. Wright, Sec., 1402 Spruce St., Philadelphia.

BALTIMORE AND WASHINGTON DERMATOLOGICAL SOCIETY

H. H. Hazen, President, 1912 R St., N. W., Washington, D. C.
H. M. Robinson, Secretary, 405 N. Charles St., Baltimore.

BROOKLYN DERMATOLOGICAL SOCIETY

E. Almore Gauvain, Sec., 47 Halsey St., Brooklyn.

CINCINNATI DERMATOLOGICAL SOCIETY

August Ravogli, Pres., Doctors' Bldg., Cincinnati.
H. Jerry Lavender, Sec., 715 Provident Bank Bldg., Cincinnati.

FOREIGN DERMATOLOGICAL SOCIETIES

Italian Dermatological Society.
Danish Dermatological Society.
La Société Française de Dermatologie et de Syphiligraphie.
Section on Dermatology, Royal Society of Medicine.
British Association of Dermatology and Syphilis.
Berlin Dermatological Society.
Cologne Dermatological Society.
German Dermatological Society in Czechoslovakia Republic.
Vienna Dermatological Society.
Munich Dermatological Society.
Deutsche Dermatologische Gesellschaft.

Abstracts from Current Literature

THE RÔLE OF FOCAL INFECTIONS IN THE ETIOLOGY OF ECZEMA, J. W. VISHER, Am. J. M. Sc. **170**:723 (Nov.) 1925.

Emphasizing the importance of a thorough examination of patients with eczema, Visher reports five cases with eczematous or toxic eruptions in which the focus of infection was found to be in the teeth, pharynx and a pelvic inflammatory process. Removal of these foci was followed by prompt recovery. He says that in these cases possibly the host had become sensitive to the bacterial end-products existing in the focus, but that the rapidity of onset in some of the cases suggested an allergic reaction.

THE HUMAN CEROBROSPINAL FLUID IN SYSTEM AND DIFFUSE DEGENERATIVE DISEASE INVOLVING THE NERVOUS SYSTEM. C. A. PATTEN, Am. J. M. Sc. **171**:48 (Jan.) 1926.

In cases of multiple sclerosis the paretic gold curve was obtained in one half of the number of fluids examined and in almost one half of the number of cases. Other conditions discussed are encephalitis, poliomyelitis, epilepsy, arteriosclerosis, amyotrophic lateral sclerosis, syringomyelia, cerebral tumors, paralysis agitans and a number of degenerative conditions.

INCIPIENT GENERAL PARALYSIS. A STUDY OF THE EARLIEST SYMPTOMS PRESENTED BY SEVENTY-FOUR CASES. H. A. BUNKER, JR., Am. J. M. Sc. **171**: 386 (March) 1926.

Patients with unaccountable nervous or mental symptoms should all have Wassermann tests made or, if necessary, lumbar puncture. Among the earliest symptoms of general paralysis in the order of frequency are irritability, reduction of activity and spontaneity, loss of weight, increased tendency to sleep, speech, memory and judgment defects, visual and digestive disturbance, insomnia, fatigability, headaches, tremor and rheumatoid pains.

THE REFRACTOMETRIC AND VISCOSIMETRIC INDEXES OF CEREBROSPINAL FLUID. A. LEVINSON and A. M. SERBY, Arch. Int. Med. **37**:144 (Jan.) 1926.

Examination of sixty-six spinal fluids by the refractometer and viscosimeter led the authors to conclude that these measures may determine a marked increase in the protein of the cerebrospinal fluid. A great increase in the readings with these instruments indicates a pathologic process of the nervous system.

JAMIESON, Detroit.

OCCUPATIONAL DERMATITIS FROM WOOD TURPENTINE. C. P. MCCORD, J. A. M. A. **86**:1979 (June 26) 1926.

McCord says that the new process turpentines produced by distillation processes from the wood are proving more irritating to the skin of workers exposed to it than the formerly employed "gum spirits of turpentine," obtained from the living tree.

Thus in a factory under his observation where formerly two or three cases of turpentine dermatitis developed during a year, he has seen thirty-five cases in two months since the substitution of wood turpentines for the gum spirits. Unfortunately, the less irritating product (gum spirits) is produced by a process that is doomed to industrial extinction. The remedy appears to be better fractional distillation of the wood turpentines, with removal of the more irritant fractions.

MICHAEL, Houston, Texas.

EXPERIMENTAL STUDIES WITH A SPIRAL ORGANISM FOUND IN A WILD RAT AND IDENTICAL WITH THE ORGANISM CAUSING RAT-BITE FEVER. H. MOOSER, J. Exper. Med. **42**:539 (Oct.) 1925.

The author found that rabbits could easily be inoculated with this organism which proved to be identical with that found in a human case of rat-bite fever in Mexico City. The primary lesion appeared in from three to five days after inoculation and was followed in about eight days by the secondary lesions. Protective antibodies are found in the blood while secondary lesions are still active.

SKIN REACTIONS TO ALTERNATE HEAT AND X-RAY EXPOSURES. J. A. HAWKINS and H. CLARK, J. Exper. Med. **42**:785 (Dec.) 1925.

Using suberythema doses of the roentgen ray and heat of sufficient intensity to be below that necessary for the production of burns, experiments were made on guinea-pigs, using each separately and both together.

Following the use of either the roentgen ray or heat alone, no symptoms developed except a scaling of the skin; but after using both agents, pronounced and resistant burns developed.

THE PROBLEM OF THE ETIOLOGY OF HERPES ZOSTER. R. COLE and A. G. KUTTNER, J. Exper. Med. **42**:799 (Dec.) 1925.

Various attempts were made in nine cases of herpes zoster to produce inoculation in rabbits, guinea-pigs and monkeys, all of which were unsuccessful.

STUDIES IN X-RAY EFFECTS. XIV. THE EFFECT OF X-RAY ON THE DIVISION RATE OF PARAMECIUM. R. T. HANCE and H. CLARK, J. Exper. Med. **43**:61 (Jan.) 1926.

The length of exposure to the roentgen rays made no appreciable difference in the division rate of paramecium, although a slight initial depression resulted for from two to five days after exposure. Relatively short exposures produced the maximum effect but long exposures (from three to four hours) produced the opposite effect, while repeated doses had no greater effect than a single one.

THE ORIGIN OF THE LEPRA CELL. J. OLIVER, J. Exper. Med. **43**:233 (Feb.) 1926.

From experiments with vital staining in rat leprosy the lepra cell was found to be derived from the histiocyte of the infected tissue. On account of the morphologic and functional similarity of the lepra cell in human and rat leprosy, it is concluded that the human cell is derived in the same manner as the rat cell.

NUCLEAR INCLUSIONS IN THE TESTICLES OF MONKEYS INJECTED WITH THE TISSUE OF HUMAN VARICELLA LESIONS. T. M. RIVERS, J. Exper. Med. **43**:275 (Feb.) 1926.

Sections of testicles inoculated with emulsified human varicella lesions showed eosin-staining nuclear inclusions which resembled those of a group of filtrable viruses.

JAMIESON, Detroit.

PRIMARY BENIGN AND MALIGNANT MELANOMA OF THE SKIN. LEE MCCARTHY and L. K. MCCAFFERTY, Brit. J. Dermat. **38**:101, 1926.

The authors review the various theories with regard to normal pigment function, stressing particularly the work of Bloch. They also discuss the evidence with regard to the mesodermal or ectodermal origin of the nevus cell, and regard it as arising from the ectodermal structure. They conclude, therefore, that the malignant growth developing from nevi should be known as nevocarcinoma rather than nevosarcoma, the latter name being applicable only to those degenerative lesions beginning in a blue nevus or Mongolian spot. They discuss the aspects of the latter two conditions, together with nevocarcinoma, nevosarcoma and melanocarcinoma.

SUPERFICIAL TELANGIECTASIS ON THE LOWER PART OF THE LEGS. K. EDEL, Brit. J. Dermat. **38**:112, 1926.

Edel describes a condition characterized by telangiectasis of the lower part of the legs which he has seen in five patients, all women. It is associated with a complaint of weariness and sensations of pressure in the depth of the tibia. The condition occurred on that part of the leg which was not protected from the cold by the skirt. The patients all had cold hands and feet, perspiring palms and soles, and palpitation of the heart. They all blushed easily, and it was evident that they were "sympathetic" subjects. He compares the condition to rosacea telangiectasia of the face, and regards the picture as a rosacea of the lower part of the legs.

LICHEN NITIDUS. H. W. BARBER, Brit. J. Dermat. **38**:143, 1926.

Barber reviews the literature dealing with this disease, and then describes the various types of eruption seen. He emphasizes particularly the type in which the eruption becomes widespread and loses its primary papular appearance, developing a pityriasiform or psoriasiform appearance. The histopathology and etiology are also discussed, and he reviews the evidence supporting the belief that lichen nitidus is to be considered a tuberculid, but does not support this theory as to its causation. He concludes by reporting three interesting cases, in one of which the buccal mucosa was involved. The article is of special interest because of the discussion of the less common types of this disorder.

GRANULOMA FUNGOIDES (T'UMEURS D'EMBLÉE TYPE). HARRY C. SEMON, Brit. J. Dermat. **38**:185, 1926.

Semon reports a case of mycosis fungoides of the d'emblée type occurring in a man aged 64. The lesions, which were either firm tumors or soft infiltrations, occupied the extremities, with a single infiltrative lesion on the glans penis. The case closely resembled those described by Kaposi in 1872, although the histopathologic picture was not in accord with the latter.

POMPHOLYX ERUPTION DUE TO IODINE APPLIED EXTERNALLY. R. T. BRAIN, Brit. J. Dermat. **38**:191, 1926.

Brain describes a case in which the patient applied iodine repeatedly to a lesion on the right wrist. After ten days of this treatment vesicles appeared on the right hand, and a day later both hands and forearms became affected with an eruption consisting of small vesicles, with some involvement of the trunk, thighs and knees. The eruption was regarded as due to iodine absorption, and recovery occurred in about ten days.

SENEAR, Chicago.

THE ABSORPTION OF MERCURIALS FROM OINTMENTS APPLIED TO THE SKIN. R. B. WILD and IVY ROBERTS, Brit. M. J. **1**:1076 (June 26) 1926.

Wild and Roberts have investigated the absorption of mercurial ointments by the skin. Their conclusions are:

1. Under the conditions of their experiments mercurials in all of the ointment bases were absorbed to some extent.

2. The greatest absorption took place from the lard base, and this absorption increased more with prolonged rubbing than with other bases.

3. Anhydrous wool fat was absorbed to a greater extent than lard, but the mercurials were not absorbed with it. The absorption of mercury was actually less than from the lard ointment of equal strength.

4. Absorption from a paraffin base was less than from a lard base.

5. The amount of mercurials absorbed was proportionate to the amount in the ointment, at least up to 30 per cent of the mercurials.

6. Mercuric oxide was most readily absorbed. This is not suitable, however, for producing systemic effect, because in strengths of greater than 10 per cent the oxide causes considerable irritation of the skin.

7. Ammoniated mercury and mercuric salicylate were absorbed almost as well as the oxide. Calomel was absorbed less than any of the other mercurials examined.

8. Metallic mercury was absorbed rather less than the oxide, but could be used in stronger concentration without causing undue irritation of the skin. The official mercurial ointment with a lard base seems to be the best preparation for insuring the general absorption of mercury. The inunction of 4 Gm. (about 1 drachm) for two minutes gave, on an average, an absorption into the body not exceeding 0.12 Gm. (about 1.84 grains) of mercury, and after ten minutes' inunction an absorption not exceeding 0.17 Gm. (about 2.61 grains).

PUSEY, Chicago.

XANTHOMA TUBEROSUM MULTIPLEX. S. E. DORE and O. L. V. DEWESSELOW, Proc. Roy. Soc. Med. **19**:49 (June) 1926.

A woman, aged 31, suffering from an evident obstructive jaundice, developed a widely distributed xanthomatosis. The cholesterol content of the plasma was 1,325 mg. per hundred cubic centimeters.

GAUCHER'S DISEASE WITH CUTANEOUS LESIONS. S. E. DORE, Proc. Roy. Soc. Med. **19**:50 (June) 1926.

A woman, aged 27, who had had a splenectomy for Gaucher's disease, developed skin lesions nine months later. The cutaneous lesions consisted of small raised brown nodules on the arms and a large patchlike lupus on the nose. Section of the spleen showed typical Gaucher's cells, but they were

not present in the section of the cutaneous nodule, and Dr. Parkes Weber regarded the two conditions as independent. The author presented the case under the diagnosis of benign sarcoid, and the pathologic report of a biopsy was that: "The section showed numerous large areas with endothelial cells, with giant-cell formation not related to lymphadenoma, but possibly to Gaucher's disease."

GUY, Pittsburgh.

PREEPITHELIOMATOUS VEGETATING STOMATITIS; REGRESSION UNDER USE OF THE ARSPHENAMINES; CANCEROUS DEGENERATION OF A LEUKOPLAKIC PATCH ON THE TONGUE. H. GOUGEROT, Bull. Soc. franç. de dermat. et syph. **32**:454, 1925.

A preepitheliomatous vegetating stomatitis of perhaps nine years' duration, in a man aged 73, involving all the mucous surfaces of the mouth, regressed under treatment with arsphenamine. Cancerous degeneration of a leukoplakic patch on the tongue developed, from which the patient died. The histologic structure was not syphilitic, and possibilities of tuberculous and mycotic infections were excluded.

FREQUENCY AND TREATMENT OF SYPHILITIC EXOPHTHALMIC GOITER. E. SCHULMANN, Bull. Soc. franç. de dermat. et syph. **32**:457, 1925.

From his experience, the author feels that syphilis may be causative in certain cases of exophthalmic goiter. He has seen the condition appear in secondary and tertiary syphilis and in congenital syphilis, and patients have responded favorably when the syphilitic infection was treated. Care must be used in the administration of iodides.

DOUBLE SYPHILITIC MASTITIS IN THE COURSE OF MULTIPLE VISCERAL SYPHILIS. E. FRANCIS, DAINVILLE and A. CLERCY, Bull. Soc. franç. de dermat. et syph. **32**: 462, 1925.

In a woman, aged 60, the date of infection was not known. The breasts became painful and nodular, and there were also signs of pulmonary, cardiac and nervous system involvement. Arsphenamine was given, and all of the manifestations subsided.

VON RECKLINGHAUSEN'S DISEASE AND CONGENITAL SYPHILIS. J. MONTPELLIER, Bull. Soc. franç. de dermat. et syph. **32**:465, 1925.

A case is reported, occurring in a man, aged 25, with corneal ulcers and oral signs of congenital syphilis.

TRANSIENT KERATOSIS PILARIS FOLLOWING INTERCOSTAL ZOSTER. JEANSELME and BURNIER, Bull. Soc. franç. de dermat. et syph. **32**:466, 1925.

In this case, keratosis pilaris followed fifteen days after the recession of the zoster, being limited to this one area. Three months later, it had entirely disappeared.

A CASE OF SYPHILITIC REINFECTION. MILIAN and LAFOURCADE, Bull. Soc. franç. de dermat. et syph. **32**:467, 1925.

In March, 1925, a young man presented an indurated ulcer of the lip, of six days' duration, with lymph node involvement. *Spirochaeta pallida* was found, and four injections of neo-arsphenamine and one of bismuth were given.

The Wassermann reaction was persistently negative. Nine months later, he reappeared with a typical penile chancre, in which *Spirochaeta pallida* was found, and a positive Wassermann reaction.

Sclerous, Edematous Erythema with Myopathy and Myasthenia. Milian and Rime, Bull. Soc. franç. de dermat. et syph. **32**:470, 1926.

Firm, edematous patches were found on all parts of the skin except the palms and soles, the face being extensively involved. There were also some small, atrophic areas. The lesions were myxedematous rather than sclerodermatous, and were of a year's duration. There was pronounced muscular weakness. Thyroid changes were blamed for the skin condition, and changes in the suprarenal capsule for the myasthenia.

A Case of Black Mole Metastasizing After Surgical Intervention. Lortat-Jacob and P. Legrain, Bull. Soc. franç. de dermat. et syph. **32**:472, 1925.

In a man, aged 69, the mole had been on the cheek since infancy. It began to enlarge, and was excised. Countless metastases appeared.

Erythema Multiforme Followed by Leukemia. Milian, Bull. Soc. franç. de dermat. et syph. **33**:2, 1926.

This case was presented by Louste at the preceding meeting (*Bull. Soc. franç. de dermat. et syph.* **32**:440, 1925). The patient had been seen by Milian in 1920, when she had typical erythema multiforme. Following this her general health had been below par. In 1922, definite signs of leukemia had appeared.

Massive and Fistulous Fibrous Tuberculoma of the Hypoderm. H. Gougerot, Bull. Soc. franç. de dermat. et syph. **33**:8, 1926.

Two cases were presented, in men aged 45 and 57 years, the lesions involving the thigh and being of from twelve to eighteen years' duration. In one case, scleroderma was simulated.

Massive Fibrous or Fibroconnective Hypodermic Sarcoid. H. Gougerot, Bull. Soc. franç. de dermat. et syph. **33**:10, 1926.

Lesions had first appeared in 1905, three months after an attack of serofibrinous pleurisy, and had progressed for two years, extensively involving the thigh. The condition had persisted, failing to yield to treatment with arsenic, mercury and the iodides. The tuberculin reaction was strongly positive; apparently tuberculous lesions appeared in an inoculated guinea-pig. The histologic picture was that of sarcoid.

Hypo-Adrenalism and Dysinsulinism of Acquired or Congenitally Syphilitic Origin; A New Pluriglandular Syndrome. Gougerot and E. Peyre, Bull. Soc. franç. de dermat. et syph. **33**:12, 1926.

Four cases of this syndrome are reported, and in three syphilis was present, congenital in two of them. Appropriate glandular and dietary treatment is required, as well as antisyphilitic therapy.

Treatment of Lupus Vulgaris by Curettage Followed by the Application of Powdered Potassium Permanganate (Method of Auregan). L. Bizard and L. Marceron, Bull. Soc. franç. de dermat. et syph. **33**:15, 1926.

The curettage is very thorough, and is followed by a liberal application of the powdered permanganate, a slightly moistened compress finally being applied.

Nine cases are reported, and the procedure is recommended for resistant cases with ulceration.

PIGMENTATION OF THE TYPE OF THE MELANOSIS OF RIEHL IN A LOCOMOTIVE ENGINEER. LORTAT-JACOB, LEGRAIN and CLERET, Bull. Soc. franç. de dermat. et syph. **33**:20, 1926.

In May, 1925, after the patient had worked as an engineer for five years, a pigmentary network appeared on the forehead, about the neck, on the feet and in the great flexures, with the histologic characteristics of Riehl's melanosis. Being present in the areas of greatest perspiration, it was thought to have been aggravated by this factor, irritative or photodynamic substances in the oil or soot possibly being causative.

PARKHURST, Toledo, Ohio.

THE TREATMENT OF LUPUS VULGARIS WITH TUBERCULIN. A. PASSINI, Gior. ital. dermat. e sifil. **67**:70 (Feb.) 1926.

The author reports excellent results in the treatment of lupus vulgaris with injections of old tuberculin of Italian manufacture. He uses from 0.000001 to 0.009 Gm. hypodermically. In some cases the roentgen ray, heliotherapy and the Finsen light have been used.

ERYTHEMA INDURATUM AND ACROCYANOSIS. L. NARDELLI, Gior. ital. dermat. e sifil. **67**:83 (Feb.) 1926.

The author reports six cases of this condition which have been under observation for as long as four years. He concludes that erythema induratum is a form of cutaneous tuberculosis which appears in tissues weakened by chronic capillary stasis—acrocyanosis. Acrocyanosis is due to an endocrinous disturbance which disappears under proper opotherapeutic treatment. In his cases he has used ovarian extract with good results. The article contains a good review of the literature on the subject.

THE VALUE OF CUTANEOUS REACTIONS TO TRICHOPHYTIN. E. TARANTELLI, Gior. ital. dermat. e sifil. **67**:108 (Feb.) 1926.

The trichophytin intradermoreaction has no specific value. The author has obtained positive tests in cases of lupus vulgaris, eczema, epithelioma and other skin diseases. It has been negative sometimes in cases of typical tinea.

CUTANEOUS FIBROSARCOMA. JULIO SCAMAZZONI, Gior. ital. dermat. e sifil. **67**:115 (Feb.) 1926.

This is a report of a case of cutaneous fibrosarcoma of the type described by Hoffmann under the name of dermatosarcoma protuberans and by Darier under the name of dermatosarcoma recidivans. The patient had a tumor about the size of a palm on the right pectoral region, near the shoulder, of reddish or purple color, of irregular surface and hard to the touch. It was of several years' duration but the general condition of the patient had not been affected, there being no metastasis. Histologically the tumor was a fibrosarcoma with edematous and myxomatous degeneration. The author reviews twenty-one other cases found in the literature.

TREATMENT OF PSORIASIS WITH POTASSIUM AND SODIUM TARTOBISMUTHATE. A. VERSARI, Riforma med. **42**:410 (May 3) 1926.

The author reports twenty-one cases of psoriasis in which the patients were treated with intramuscular injections of this salt of bismuth. In twelve

cases the psoriatic eruption disappeared without local treatment, but there was a relapse after a variable time, usually from three to sixteen months. In three cases the disappearing psoriatic patches left leukodermic areas. The author has been unable to find in his cases, either in the psoriasis lesions or in the blood, *Spirochaeta sporogona-psoriasis* of Rasck and Ducrey. In endeavoring to find the mode of action of bismuth in psoriasis, the author investigated the presence of bismuth in the skin, with negative results.

MYASIS IN ITALIAN SOMAL. C. VERONI, Riforma med. **42**:416 (May 3) 1926.

Myasis is common in Africa. The flies usually found depositing their larvae in the skin or mucous membranes are *Cordyloba anthropophaga, Cordyloba rhodani, Oestrus ovis* and *Archmeromya luteola,* the last mentioned found very frequently in furuncle-like lesions of the skin in the Congo region. In the Somal the fly most commonly found by the author was *Lucilia argyrocephala.*

ACTINOMYCOSIS IN MEXICO. IGNACIO PRIETO, Gaceta méd. **57**:44 (Jan.-Feb.) 1926.

According to the author, actinomycosis is a common disease in Mexico. He describes a tumoral and a fistulous form. Treatment with potassium iodide in large doses and arsphenamine intravenously has given very satisfactory results. Potassium iodide alone is not so effective.

PARDO-CASTELLO, Havana.

STUDIES IN PSORIASIS VULGARIS: RESULTS OF CYTOLOGIC INVESTIGATIONS. B. LIPSCHÜTZ, Arch. f. Dermat. u. Syph. **150**:195 (May) 1926.

By a particular technic, Lipschütz demonstrated in psoriasis vulgaris a characteristic change in the nucleus of epithelial cells of the acanthotic prickle cell layer. This change is in the nature of a deep staining "inclusion mass" within a hyperchromatic nuclear membrane. In well developed cases nuclei showing this change are numerous and in part present an unmistakable topographical arrangement. Evidence favors the opinion that the nuclei of the epithelial cells are the primary point of attack of the psoriasis noxa. If his views are proved correct, psoriasis vulgaris can be defined, within the group of the epithelioses, as a nuclear inclusion disease with a chromophanous, preferably basophilic, nuclear mass. He is inclined to connect the nuclear inclusions with the *Chlamydozoa.* The article is illustrated by excellent colored drawings from microscopic pictures. It is a continuation of work published several years ago.

EXPERIMENTAL GRANULOMA PEDICULATUM. P. BALOG, Arch. f. Dermat. u. Syph. **150**:252 (May) 1926.

Balog snipped a circular bit of skin from the back of several rabbits and inserted a rubber ring to prevent new skin from growing over the granulations of the healing process. In each case a typical pedunculated granuloma resulted. Since strict precautions were taken to prevent bacterial contamination, Balog believes that micro-organisms may be excluded as an etiologic factor in these cases, and that the experiments prove that no micro-organism is specific for the condition. He holds further that his experiments demonstrate that the pedunculated granuloma may develop from any ordinary granulation tissue under suitable growth conditions, that it is an entity from the standpoints of morphology and pathogenesis, but not from the standpoint of etiology.

TERTIARY SKIN AND BONE CHANGES IN SYPHILIS OF THE CENTRAL NERVOUS SYSTEM. A. PROKOPTSCHUK, Arch. f. Dermat. u. Syph. **150**:261 (May) 1926.

Among 620 cases of syphilis of the central nervous system, Prokoptschuk found sixty-four (10.32 per cent) with manifest or latent signs of tertiary syphilis of the skin or bone. Among sixteen cases of tabes dorsalis which showed not the slightest clinical sign of skin or bone changes, roentgenologic examination of the bones of the leg showed syphilitic osteitis in five. These facts speak against a special neurotropic form of *Spirochaeta pallida*. A study of the treatment received previous to the appearance of the nervous symptoms showed that only 8.76 per cent of the patients had had adequate treatment. Neo-arsphenamine in any amount had been given in only 9.8 per cent. In 17.5 per cent of the cases the onset of neurosyphilis followed an acute infectious disease.

SKIN DISEASES AND BODILY STRUCTURE. O. GANS and H. W. GRUHLE, Arch. f. Dermat. u. Syph. **150**:271 (May) 1926.

One hundred and eighteen men with various skin diseases, syphilis and gonorrhea were examined as to their physical structure. The statement of Spiethoff and others that the pyknic type prevails among psoriatic patients was not confirmed in the study of the thirty-four cases of psoriasis in this group; the leptosomatic type was found comparatively seldom among psoriatic patients. Tall, thin men with a strong growth of hair on the head and slight pigmentation of the skin were only half as frequent among psoriatic patients as among men with healthy skin. The proportion of psoriatic patients with an under-developed layer of fat, long arms, light eyes and thin skin, compared with men with healthy skin, was four to fourteen, while with the substitution of thick skin for thin the proportion became six to seven. The combination of thick nose, thick muscles, compact bony structure and projecting superior maxillary bone was met with nine times as often in the psoriatic patients as in men with healthy skin. Without the projecting superior maxillary bone, the proportions were nearly equal.

PATHOGENESIS OF ANGIOLUPOID. C. TANIMURA, Arch. f. Dermat. u. Syph. **150**: 313 (May) 1926.

Subcutaneous injection of old tuberculin was followed by a distinct local reaction in the case of angiolupoid here described. Tanimura classes the disease as a hematogenous tuberculosis of the skin.

CARPENTER, Chicago.

DERMATOLOGIC ABSTRACTS

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

POSSIBLE CAUSE FOR PEMPHIGUS NEONATORUM. R. E. KRIGBAUM, Am. J. Obst. & Gynec. **11**:494 (April) 1926.

Krigbaum associates the use of liquor cresolis compositus with the occurrence of pemphigus neonatorum. He thinks that there is a strong possibility that the irritating alkaline solution is at times the cause of pemphigus. Therefore, no liquor cresolis compositus which has not been titrated to determine its free alkalinity should be used in delivery rooms or nurseries in such a way that it might come in contact with babies' skins; second, that one cannot

eradicate an epidemic of pemphigus by changing the solutions in the delivery room or nursery without resorting to the usual methods of isolation and prevention, because when an epidemic is once started, the mild staphylococcus increases in virulence as a result of its rapid transmission from one host to another, to such an extent that it becomes capable of infecting a normal non-irritated baby; third, as a precaution against the common form of impetigo, young children should be prohibited from visiting new-born babies during their confinement to the hospital.

CONJUGAL SYPHILIS OF NERVOUS SYSTEM. A. GORDON, Am. J. Syph. **10**:201 (April) 1926.

In summing up the subject of conjugal syphilis of the nervous system, Gordon says, it must be admitted that several etiologic elements should be taken into consideration. First, the clinical and experimental evidences favor the conception of a special neurotropic virus different in its character from the dermotropic virus. Second, there is a special innate predisposition for organic alteration of the central nervous system. Third, the intensity of the use or overfatigue of the cerebral centers or of the spinal axis should be noted. Fourth, conjugal neurosyphilis includes not only the parenchymatous forms (tabes, general paralysis), but also the vascular or meningeal type in which the nervous disturbances appear secondarily.

STUDY OF TESTES FROM SYPHILITIC PATIENTS. E. R. SALEEBY, Am. J. Syph. **10**:215 (April) 1926.

The testes from forty syphilitic human subjects were studied by Saleeby grossly and histologically. In addition to the varying degrees of fibrosis, there were, grossly, no characteristic changes. Microscopically, twenty-three cases showed pathologic changes commonly attributed to *Spirochaeta pallida* infection. In seventeen of these twenty-three cases, the Wassermann reaction was positive; in two, negative, and in four, not made. The Levaditi preparations were negative for the organism in all the cases, except in a 7 months' fetus, in which the spirochetes were demonstrated in large number. Eight rabbits were injected, intratesticularly, with emulsions from eight cases and were observed for four months. None of the rabbits developed syphilomas. The findings in this study tend to show the frequency of the disease in the testes and the difficulty of demonstrating the organism in the tissues with our present methods and present knowledge of its morphology.

TRYPARSAMIDE IN TREATMENT OF NEUROSYPHILIS. L. BERG, Am. J. Syph. **10**:261 (April) 1926.

Observation for a fairly long period has convinced Berg of the value of tryparsamide in producing clinical improvement in more than 40 per cent of patients selected without any particular care to take only those which would be most favorably influenced by treatment, observing only the precautions not to take those susceptible to optic nerve injury. In addition, he has found another 50 per cent at least moderately improved by treatment.

URTICARIA AND ALKALI RESERVE. PASTEUR VALLERY-RADOT, ET AL., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:692 (April 30) 1926.

Pasteur Vallery-Radot, Blamoutier and Laudat found a low alkali reserve in two of seven cases of urticaria. Intravenous injection of 3 Gm. of sodium bicarbonate in 100 cc. of water prevented further attacks of urticaria, while

daily ingestion of 15 or 20 Gm., for a week, was ineffectual. Of five patients with normal or exaggerated alkaline reserve, the influence of sodium bicarbonate was manifest only in one. The effect in this case may have been due to a humoral shock from the injected drug.

PRETUBERCULOUS RHEUMATOID PURPURA. P. CARNOT ET AL., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:695 (April 30) 1926.

Carnot, Libert and Bariéty report the case of a man, aged 40, in whom rheumatoid purpura preceded by a few days a fatal acute pneumonia with tuberculous meningitis. Similar cases seem to be rare; more frequent are those in which purpura occurs during the course of tuberculosis.

ANAPHYLAXIS TO MILK. E. DEBBAS, Paris méd. **59**:506 (May 22) 1926.

The history of Debbas' patient is as follows: During the first three months of life the infant was fed at the mother's breast. Then cow's milk was given; a typical anaphylactic shock with urticaria developed the same day. It subsided on restriction to water and reappeared when milk was given again. Feeding by a wet nurse also entailed two anaphylactic shocks. Desensitization started with 5 drops of cow's milk (mixed with vegetable soup); it was increased by 5 drops every three hours, not surpassing 20 drops the first day. There were no signs of intolerance. The next day, the first dose was 20 drops, increased by 5 to 30 drops. The third day the first dose was 30 drops, increased by 10 to 60 drops. The fourth day a teaspoonful of milk was given at once; the fifth day a tablespoonful, increased to a cup. The cup dose was continued for three days, the quantity of the soup gradually reduced. The infant is now 9 months old; no anaphylactic shocks have been noted to date. It is possible that the exaggerated susceptibility to cow's milk had aroused a latent anaphylaxis to the human milk.

NAILS AND ENDOCRINS. J. HELLER, Deutsch. med. Wchnschr. **52**:786 (May 7) 1926.

Heller examined the nails in 562 patients with various grave endocrine diseases. He admits the possibility of endocrine disturbances in the nails in six or eight of these patients. He concludes that most of the reported changes of the nails are not existent or are in no relation to the endocrins. For instance, he found the trichophyton in the nails of a patient demonstrated as a case of abnormal fragility of the nails due to ovarian disturbance. He is also skeptical as to the whole of endocrine therapy in skin disease. The only improvement he obtained with it in psoriasis was in a little girl to whom he gave prostate tablets, because he happened to be out of thyroid tablets.

PRIMARY ALLERGY AND SHOCK. VON STARCK, Monatschr. f. Kinderh. **32**:119 (May) 1926.

Von Starck observed a boy, 1½ years old, with an eczema due apparently to hypersensitiveness to peas. The boy's condition improved. Starck wanted to test the correctness of the history. The boy was to be fed with a thick soup containing peas and other vegetables. He died after taking three spoonfuls.

Society Transactions

PHILADELPHIA DERMATOLOGICAL SOCIETY

Regular Meeting, April 2, 1926

S. S. Greenbaum, M.D., *Presiding*

A Case for Diagnosis. Presented by Dr. Klauder.

C. S., a white girl, aged 21, had an eruption beginning in August, 1925. It had been present constantly, but at times improved, and again became worse. The eruption was generalized, from the neck to the ankles, and was composed of macules and papules with slight scaly formation, some of which had partly involuted, leaving a slight atrophy, with a wrinkled surface. It was mildly pruritic. The palms were free from the eruption.

DISCUSSION

Dr. Weidman: I can give no positive diagnosis, but I do not think it is seborrheic dermatitis. I consider the diagnosis of parapsoriasis of Juliusberg as quite possible.

Dr. Wright: I agree with the difficulty of diagnosis, and place the case somewhere in the parapsoriasis group.

Guttate Parapsoriasis. Presented by Dr. Greenbaum.

J. C., a boy, aged 15, had the condition for eighteen months. It began on the chest and spread to all parts of the body, with improvement and relapses. The lesions were not itchy. They were slightly infiltrated papules varying in size from that of a pea to a little larger. The patient had been treated in various clinics and private offices in the city. Part of the skin had been peeled with a mercury vapor lamp.

DISCUSSION

Dr. Weidman: I thought there was quite a bit of scale on some of the papules, and that there was more infiltration than is seen usually in parapsoriasis. I believe the condition is a simple psoriasis.

Dr. Klauder: In the patient whom I have shown, there were lesions not seen in parapsoriasis — the atrophic-like skin with wrinkling. If my patient's condition is not parapsoriasis, I do not know what diagnosis to make. I agree to the diagnosis of parapsoriasis for Dr. Greenbaum's.

Parapsoriasis. Presented by Dr. Schildkraut.

P. J., white woman, aged 55, for eight months had had a widespread papular and patchy eruption, somewhat scaly and slightly pruritic.

DISCUSSION

Dr. Klauder: This is also a case of parapsoriasis.

Dr. Weidman: I would agree much more readily to the diagnosis of parapsoriasis in this case than in the second case shown. But I do not like to agree to a diagnosis of parapsoriasis in three cases in one evening.

DR. CORSON: I agree with the diagnosis in this case.

DR. WHITE: I should like some therapeutic suggestions. In an extensive case, the eruption cleared up entirely under ultraviolet light treatment and a weak neorobin ointment.

DR. SCHILDKRAUT: The condition in the patient presented had cleared up considerably with ultraviolet light. In addition she was receiving a capsule containing 1/30 grain (0.002 Gm.) each of arsenic trioxide and pilocarpine hydrochloride, three times a day.

DR. GREENBAUM: I wish to call attention to the fact that the classical types of parapsoriasis are supposed to be rebellious to treatment, and are not pruritic. I do not know exactly how to classify the last case shown, but I believe it is more of the lichenoid type, whereas the first two cases, I think should be called guttate.

DR. WHITE: In two patients extensively treated with the ultraviolet lamp, there was no response.

FOLLICULITIS DECALVANS OF QUINQUAD. Presented by DR. GREENBAUM.

K. L., a white girl, aged 22, had had a patchy baldness on the scalp ever since she could remember. Examinations for fungi were negative. At the borders of some of the patches were a few pinhead sized pustules.

DISCUSSION

DR. WEIDMAN: I think the ringworm diagnosis is applicable. A girl, aged 18, shown some time ago, is improving under treatment, but very slowly.

DR. CORSON: I am inclined to make the diagnosis of folliculitis decalvans. I would call attention to the destruction of the hair follicles.

DR. GREENBAUM: The large patch of baldness has a large cicatricial area, and at the periphery there is an occasional infection of individual hair follicles. It seems to be progressing slowly on one side.

A CASE FOR DIAGNOSIS. Presented by DR. KLAUDER.

L. M., a white man, aged 35, had an ulceration of the arm and chest for two years. He was in Panama until 1922. The ulcer appeared spontaneously about that time at the site of an abscess involving the axillary glands. The abscess ruptured and gradually extended. It now involved the middle of the arm, and the chest. Some areas had healed: Other areas were superficially ulcerative, presenting a base with soft, easily bleeding tissue. The edges were raised and sloping, and in places undermined.

DISCUSSION

DR. WEIDMAN: I consider this a replica of the case shown four months ago. In that patient the lesion was definitely violaceous, and the diagnosis of tuberculosis was seriously considered. Three sets of guinea-pigs were inoculated, without the demonstration of tuberculosis. Diphtheroids were demonstrated in the direct smears. Sections from the case were demonstrated, and I do not believe that they were tuberculous. There were numbers of giant cells in Dr. Klauder's sections which I think are of the foreign body type. One cell contained an elastic fiber. I believe that some skin lesions may result from the degeneration of the elastic fibers, acting as foreign bodies, and

providing a ground for bacterial invasion. There is some sort of a relation between disturbances of the elastic tissue and tuberculosis, so I consider the picture of the sections to be neither tuberculosis, nor carcinoma, but to be caused by some organism, perhaps not yet catalogued. It is unthinkable that we have as yet identified all of the organisms which might gain a foothold on the skin.

DR. WHITE: The patient quoted by Dr. Weidman has had no treatment since he was shown. Previously he had two courses of neo-arsphenamine, and ultraviolet rays, to which he attributed the improvement. The patient has written to the University stating that now all but about 10 per cent of the ulcer has healed.

DR. WRIGHT: I think it is difficult to rule out tuberculosis on the clinical appearance of this lesion. It is a sluggish lesion, healing in some places, progressing in others and having undermined borders.

DISSEMINATED LUPUS ERYTHEMATOSUS. Presented by DR. WHITE.

G. I., a man, aged 39, a detective, had an erythematous eruption on the face for fifteen months. Five weeks ago, the eruption spread, and the ends of the fingers and toes were involved. There were general symptoms of arthritis. There was also a mild generalized morbiliform eruption, not referable to the condition for which he was shown. The patient had taken salicin internally.

DISCUSSION

DR. WEIDMAN: I agree with the diagnosis. In the history of the onset, it was found that the lesions had appeared over night — the face became very much swollen after the fashion of angioneurotic edema. The condition was diagnosed erysipelas, but there was no rise of temperature. Sudden onset strengthened a little more the opinions of some that the condition at the bottom of lupus erythematosus is akin to erythema multiforme.

DR. KLAUDER: I do not believe that the eruption on the trunk is due to salicin, as was stated to me. Kaposi, when he first described the acute condition, described a morbiliform eruption on the chest. The prognosis is grave, and the patient should be in bed.

DR. WHITE: Although the patient has a slight rise in temperature in the afternoon, physical examination was negative. Report on a roentgenogram of the chest has not yet been received.

DR. CORSON: I saw a case like this one, in which the eruption was thought by one of the members of the hospital staff to be pellagra. The eruption on the other parts of the body would have been difficult to diagnose, were it not for the facial eruption. My patient was quite weak and feeble, and had a high temperature.

DR. GREENBAUM: These cases are very sad. I would suggest repeated blood cultures, although I can suggest no reason for them, because the feeling is that the condition is toxic, with tuberculosis as the basis. The lesions on the chest may be part of the picture, but in the case I saw, the lesions were more hemorrhagic than purely erythematous.

ACRODERMATITIS CHRONICA ATROPHICANS, ACCOMPANIED BY NEURITIS. Presented by DR. WRIGHT.

Mrs. C. G., aged 46, for the past ten years had observed changes in the skin of the arms and legs. There had been the gradual development of

diffusely indefinite patches of a violaceous red color, accompanied by some atrophy of the skin. Eight years ago she developed pain in the left forearm, accompanied by a sensation of numbness and a feeling of pins and needles. She had since had all her teeth removed, without benefit. The menopause occurred two or three years ago, without change in the condition. The tonsils were normal, and the Wassermann reaction was negative.

DISCUSSION

DR. WEIDMAN: I would call attention to the telangiectases present. The atrophy is of the skin and does not affect so much the subcutaneous tissues, as is usual in acrodermatitis. I think that the diagnosis of poikiloderma atrophicans vasculare should be considered.

DR. KLAUDER: I agree that the atrophy was not marked for a duration of ten years, but I subscribe to the diagnosis.

DR. GREENBAUM: I think that the neuritic condition might have preceded the changes in the skin, and the neuritis might be the result of infection somewhere in the economy. All foci should be removed. I am inclined to agree with the diagnosis.

EPITHELIOMA. Presented by DR. MARKOWITZ.

I. R., a man, aged 69, had a lesion on the lower lip for one and one-half years. It began as a small water blister, followed by the growth. It was a walnut sized growth, extending from the mucous membrane of the lip, and bled easily on trauma.

A CASE FOR DIAGNOSIS. Presented by DR. CORSON.

F. S., an Italian barber, aged 44, had had an erythematous eruption for twenty-five years. It began on the legs, but rapidly became generalized. It was mildly pruritic. The skin had always been somewhat inflamed, with a fair amount of scaling. Treatment was entirely unsuccessful in giving any clinical or symptomatic relief.

DISCUSSION

DR. WEIDMAN: Has the patient received any recent treatment?

DR. CORSON: He has had no special treatment recently.

DR. WEIDMAN: I have seen three of these widespread erythrodermias in Italians, most of whom showed more thickening of the skin than did this patient. In one case there was a question as to whether the condition was leukemia cutis or mycosis fungoides, but in five years neither of these conditions had developed.

DR. GREENBAUM: I think Dr. Weidman's remark is quite apropos. If the leukemia cutis and mycosis fungoides could be eliminated, it might develop into the thickened type of Hebra's pityriasis rubra.

DR. CORSON: I believe that this is pityriasis lichenoides chronica. There is so little scaling and itching and infiltration, that I would exclude dermatitis exfoliativa. There are also some discrete lesions.

SARCOID — DARIER-ROUSSEY. Presented by DR. GREENBAUM.

I. K., a white woman, aged 18, presented from twelve to fifteen hemohypodermic violaceous infiltrated lesions on the right forearm, and several scaphoid

lesions on the buttocks. These were of seven years' duration. A roentgenogram of the lungs was negative. A blood count was normal. An intracutaneous tuberculin test was negative. Biopsy studies were not yet completed.

DISCUSSION

DR. WEIDMAN: I think the appearance is quite indicative of sarcoid, but I do not see why the Darier-Roussey diagnosis should be preferred to that of Boeck. Something that I have not seen in cases of sarcoid is the capillaries traversing the infiltrate of the lesions.

DR. CORSON and DR. WHITE both agreed with the diagnosis.

ARSPHENAMINE DERMATITIS. Presented by DR. YOUNKMAN.

R. M., a colored man, aged 38, had a positive Wassermann reaction. The primary lesion was present twenty-five years before. He had been receiving continuous treatment with arsphenamine since last July. Six weeks before presentation arsphenamine administration was stopped, and two weeks ago the patient first complained of itching, at which time he had various scattered patches, eczematoid in nature, and lichenified, with a follicular element. It was shown as a case of arsphenamine dermatitis. The last injection gave the man an infiltration, and the connection between that and the appearance of the dermatitis was sought. Urine and blood chemistry studies were normal.

DISCUSSION

DR. KLAUDER: In my experience, most of these cases follow a faulty venipuncture, and I think that is the reason sulpharsphenamine is being discarded. These cases are on the increase, and may follow the first, second, or third injection. Such accidents have given a black eye to the intensive treatment of syphilis.

DR. WEIDMAN: The distribution is good for eczema — in the flexures of the elbows, knees, axillae and on the neck. Also, the individual lesions are small papules, intermixed with pustules. I do not attribute this to any local application. As to the increased incidence of arsphenamine dermatitis, I think that no single dermatologist sees enough cases to come to an opinion. I have had close contact with the Philadelphia General Hospital in the last three or four years, but I cannot recall more than four or five scattered cases of arsphenamine dermatitis in that hospital.

DR. SCHILDKRAUT: Is it feasible to inject sodium thiosulphate into the tissues in cases of faulty venipuncture?

DR. WHITE: There is a patient in the University of Pennsylvania Hospital, with an arsphenamine dermatitis which appeared one week following faulty venipuncture. He is in a serious condition.

DR. WEIDMAN: It was suggested at the last Chicago meeting of the American Medical Association that the direct injection of sodium thiosulphate, when it was recognized that the arsphenamine had not gone into the vein, gave immediate relief from the burning and untoward symptoms.

DR. GREENBAUM: I think the injection of sodium thiosulphate is very bad. The pain, if anything, is worse; it causes much pain in itself. I have tried it, and found that it does cause pain. I am not sure that the dermatitis is

caused by the faulty venipuncture, and I rather think that it is due to too much of the drug. Now that smaller doses are given, I have seen less untoward effects.

LOCALIZED SCLERODERMA. Presented by DR. SCHILDKRAUT.

H. K., a white girl, aged 24, for the past seven years had lived in Jamaica. Two years ago she noticed a white spot on her neck. The spot was quite irregular, probably 2 inches (5.08 cm.) long and three quarters of an inch (0.19 cm.) in diameter, tapering toward the ends. It was hard, waxy and presented a fawn colored body. The skin was adherent to the subcutaneous tissue.

DISCUSSION

DR. GREENBAUM: A localized area of this sort might be softened after a long time by negative electrolysis. Thyroid extract has been used also.

REPORT OF A CASE. By DR. WEIDMAN.

On a boy of 15, with the lesion on the skin of the shin, diagnosed as prickle cell carcinoma, who was shown several months ago, surgeons excised all three lesions. The material was examined very carefully, and in two of the lesions no trace of epithelioma was found. In the scar at the biopsy site, there was hyperplasia of the interpapillary pegs. We have either to discount very much the microscopic evidence of carcinoma or feel that this was a very early carcinoma in which ulceration took place, and directed the attention to the site of the biopsy. I think this case is an early epithelioma, for several pathologists have examined the sections of the biopsy and made that diagnosis.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY AND SYPHILIS

Regular Meeting, April 6, 1926

FRED WISE, M.D., *in the Chair*

OCHRONOSIS; VARICOSE ULCERS. Presented by DR. CANNON.

Mrs. M. M., a houseworker, aged 61, born in the United States, had had ulcers of the leg for thirty-five years, which she had treated constantly for the past twenty years with phenol salve. Five years after starting treatment, a bluish pigmentation appeared on the nose and the backs of the hands, gradually involving the forearms, face and sclera, and gradually increasing in depth. Examination showed on the cartilages of both ears, over the elbows and hands, particularly the larger joints, a dark blue to slate colored discoloration. The skin of the face and body was dry, bluish and mottled. There were varicose ulcers on the lower third of both legs. The urine and Wassermann examinations were negative. Chemical examination of the blood revealed: urea nitrogen, 17 mg. per hundred cubic centimeters; sugar, 1 per cent. The temperature, pulse and respiration were within normal limits. Blood examination revealed: hemoglobin, 60 per cent; red blood cells, 3,400,000; white blood cells, 9,500; polymorphonuclears, 68 per cent; lymphocytes, 32 per cent.

BAZIN'S DISEASE. Presented by DR. CANNON.

R. B., a girl, aged 10, born in the United States, had a condition which started a year prior to presentation with red, swollen, tender, bleeding nodules on both legs. These nodules healed, and others appeared from time to time. Examination showed on both sides of the legs, heels and flexor surfaces of the thighs numerous deep and superficial nodules, not tender and freely movable, some the color of the skin and others dark red, with central sinuses. The urine and Wassermann examinations were negative. The Pirquet test was positive; nose and throat cultures were positive for Klebs-Loeffler bacilli. Blood examination revealed: hemoglobin, 95 per cent; red blood cells, 5,010,000; white blood cells, 6,400; polymorphonuclears, 67 per cent; lymphocytes, 32 per cent; eosinophils, 1 per cent.

DISCUSSION

DR. PAROUNAGIAN: From the location of the lesions, which are situated anteriorly and posteriorly, I am inclined to think it is not a true case of Bazin's disease. I favor the diagnosis of congenital syphilis; the child has Hutchinson's teeth, an irregular hair line and a high arched palate. In spite of the negative Wassermann test, the diagnosis of syphilis should be considered.

DR. CANNON: The examination shows a tuberculous condition. She gave a marked focal, local and constitutional reaction to tuberculin, and was treated for some time with tuberculin. Sometimes the focal reactions were so severe that she developed vesicles and bullae, which I believe to be almost pathognomonic of tuberculosis. As for the teeth, irregular hairline, and high arched palate, I do not see how one can call a case congenital syphilis merely on such evidence.

GRANULOMA INGUINALE (LEISHMAN-DONOVAN BODIES DEMONSTRATED). Presented by DR. CANNON.

Mrs. L. V., a houseworker, aged 20, was born in the United States. The condition started two years prior to presentation as a swelling of the inguinal gland, which later ulcerated. She received no treatment. Extending from between the buttocks over the crotch and the inguinal and suprapubic regions, was a marked ulceration with atrophy and scarring in the center; the periphery showed an ulcerated verrucose condition with a mucopurulent, foul smelling discharge. The urine and Wassermann examinations were negative. Chemical examination of the blood revealed: urea nitrogen, 9 mg. per hundred cubic centimeters; sugar, 0.11 per cent; blood count; hemoglobin, 60 per cent; red blood cells, 3,720,000; white blood cells, 7,200; polymorphonuclears, 60 per cent; small lymphocytes, 30 per cent; large lymphocytes, 8 per cent.

Treatment consisted of iodoform dressings locally, and intravenous injections of tartar emetic.

DERMATITIS MEDICAMENTOSA. Presented by DR. CANNON.

M. G., a man, had been presented at the last meeting of the Section as having a case of dermatitis venenata following the application of iodine. At that time two of the members suggested a gonorrheal eruption. He was presented a second time to show the improvement on the discontinuance of iodine and iodide, and local applications of salicylic oil.

DISCUSSION

DR. CHARGIN: When the patient was seen before I thought the condition was gonorrheal keratoderma; I have seen him since, and still he has that disease. It is not uncommon for this condition to clear up almost entirely, so far as the skin lesions are concerned, but the nail lesions persist for a longer period. The nail lesions tonight are typical. In going over the history when I saw him at the hospital, I found an old gonorrheal history, etc., and numerous patches scattered over the body.

DR. CANNON: Dr. Chargin may be right about the diagnosis. It had many features suggestive of a gonorrheal keratoderma, but the condition cleared up rapidly after discontinuing iodide by mouth; the tremendous thickening of the soles and palms has entirely disappeared, and the nails have greatly improved. We could get no history of gonorrhea along the genito-urinary tract. We took sections for biopsy, the report on which has not been received. This should greatly aid in clearing up the diagnosis.

BULLOUS ERYTHEMA MULTIFORME. Presented by DR. CANNON.

H. D., a porter, aged 31, born in Russia, had been shown by Dr. Howard Fox at the last meeting, and was now presented again because there had been some question as to the diagnosis. The eruption had greatly increased in severity, and the bullous lesions practically covered the entire body and the mucous membrane of the mouth. A section of the skin had been taken which showed a picture of bullous erythema multiforme. The man had been put on alkalis and forced fluids, and the eruption had practically disappeared.

SYPHILITIC ADENITIS. Presented by DR. CANNON.

Mr. J. L., aged 24, a telephone operator, born in the United States, developed a chancre eight weeks prior to presentation, twenty-seven days after exposure. Four weeks later, the inguinal glands became swollen and tender. Examination showed a small scar at the junction of the glans and corona. The inguinal glands, which were swollen to the size of a lemon, were distinctly tender. While in the hospital he developed erythematous and tender nodules over the shin of both legs. The dark-field examination of fluid from the glands was negative. The urine was reported normal; the result of the Wassermann test has not been reported. Chemical examination of the blood showed: urea nitrogen, 17 mg. per hundred cubic centimeters; sugar, 0.09 per cent. The red blood cells were 4,200,000; the hemoglobin estimation, 90 per cent (Tallquist); the white blood cells, 17,000; polymorphonuclears, 70 per cent; lymphocytes, 30 per cent.

LUPUS VULGARIS. Presented by DR. CANNON. (From the City Hospital.)

W. C., a negro janitor, aged 21, born in the United States, said that the condition presented began five years previously as pimples at the angle of the mouth, spreading slowly to adjacent areas. He was treated with curettage and the roentgen rays, with relief. Two and a half months before presentation, the condition reappeared at the original site. Examination showed a large area around the mouth and lips and extending over the left side of the face, the center of which was composed of light red, deeply pigmented scar tissue. The borders were nodular, brownish red, in places ulcerated and verrucose. Similar conditions were present over the lips and angles of the mouth. The urine and Wassermann examinations were negative. The biopsy report showed

chronic granulomatous inflammation of the corium with round cell infiltration, endothelial proliferation and giant cells — morphologic tuberculosis.

LUPUS VULGARIS. Presented by DR. MCCAFFERTY. (From the Service of Dr. Kingsbury, New York Polyclinic Medical School and Hospital.)

G. B., a man, aged 38, a newsboy, born in the United States, had a condition which began when the patient was 10 years of age, and gradually increased. It was presented as a case of extensive lupus vulgaris.

PSORIASIS TREATED WITH THE ALPINE LAMP. Presented by DR. MCCAFFERTY. (From the service of Dr. Dillingham, New York Polyclinic Medical School and Hospital.)

W., aged 34, a machinist born in Germany, was presented merely to show the effect of the Alpine lamp. It was interesting to note that the patient had been entirely free from psoriasis for one year, during which time he had been able to control his diet, eating mostly vegetables. A few weeks prior to presentation he changed his residence and had had to eat in restaurants, where he could not get the food he desired. Coincidently with this change, the psoriasis reappeared.

FOLLICULITIS DECALVANS TREATED WITH ROENTGEN RAYS. Presented by DR. MCCAFFERTY. (From the service of Dr. Dillingham, New York Polyclinic Medical School and Hospital.)

I. D., aged 28, a woman telephone operator, born in the United States, presented a condition which began twelve years previously, at which time there were numerous millet sized to split pea sized, ulcerating pyogenic lesions confined to the scalp. She first presented herself in 1924, at which time there were atrophic areas of these lesions surrounded by follicular pustules at the periphery. Some of the areas consisted of split pea sized, ulcerating, pyogenic lesions covered with a thick crust. When this crust was removed and the lesion was cleansed, it revealed an abscess which extended deeply into the scalp. The patient was first treated with ointments, vaccines and Alpine light, but without result. Epilation was finally decided on, and on Sept. 4, 1924, the scalp was epilated. The patient purchased a transformation at this time, and wore it continuously. After the hair had fallen, the scalp cleared up, but on regrowth the former condition recurred, and after several months became almost as bad as it had been previously. In January, 1926, it was decided to resort to epilation again. Following this epilation, the patient was instructed to wear a white cap next to the epilation, changing it daily. Since the second epilation and the wearing of the white cap, there has been no recurrence. It was believed that the patient reinfected herself from the transformation after the first epilation.

FAVUS AFTER ROENTGEN-RAY TREATMENT. Presented by DR. MCCAFFERTY. (From the service of Dr. Dillingham, New York Polyclinic Medical School and Hospital.)

R. L., a milliner, aged 20, born in Russia but who had lived in this country for the last fifteen years, had a condition which had begun fifteen years previously. She first visited the clinic in 1924, when there were several pea to dime sized atrophic areas on the scalp, which were surrounded by follicular papules. The patient had been examined at the laboratory on several occasions.

and each time the results had been negative. The case was considered to be one of folliculitis decalvans, and was so presented at the dermatologic section of the Academy. After several months' treatment with the usual pyogenic ointments, vaccines, etc., it was decided to resort to epilation with the roentgen rays. After the hair had been clipped off, characteristic areas of active favus were seen which were positive microscopically. The diagnosis was then changed from folliculitis decalvans to tinea favosa. The patient then received an epilating dose, after which the hair fell out and regrew. The patient had since remained well, without any recurrence.

There was also a favus of the nails, which had not cleared up as promptly as the scalp, because of the patient's irregularity in receiving treatment.

SYPHILITIC SUPERINFECTION. Presented by DR. PAROUNAGIAN and DR. MASON.

R. W., aged 30, married, a chauffeur, was seen first on March 5, 1925, at which time he presented a chancre on the dorsum of the prepuce and a roseola. His Wassermann reaction was ++++. He received eight injections of silver arsphenamine and 11 of mercuric salicylate from March 5 to May 19, 1925, after which he discontinued his visits of his own accord.

On August 10, he reappeared with a recurrent roseola; his Wassermann reaction was still ++++. He then received six more injections of arsphenamine and 15 of mercury from Aug. 11, to Dec. 1, 1925.

On March 8, 1926, he returned with new lesions on the ventral aspect of the mid-shaft. A few days later two more lesions appeared on the scrotum (left). A dark-field examination was positive for all sores. He had been exposed one month previously. He again presented a macular eruption, with mucous patches in the throat, and the Wassermann reaction was again or still ++++.

PERMANENT ALOPECIA FOLLOWING ROENTGEN-RAY TREATMENT. Presented by DR. MCCAFFERTY. (From the service of Dr. Kingsbury, New York Polyclinic Medical School and Hospital.)

I. A., aged 32, a clerk, born in the United States, developed a severe eczema of the scalp in France, seven years prior to presentation, for which he was treated with ointments without result. In 1922, he had a few roentgen-ray treatments in order to clear up the seborrheic eczema. He said that following these treatments he developed an area of permanent alopecia over the crown of the head, and that he had had six roentgen-ray treatments at this time. Two years later, he had his first epilation and then eight weeks later he had a second epilation. Since that time his scalp had been very dry.

As presented, he had an erythema and numerous follicular pustules. If the scalp was not kept well oiled, large thick crusts formed over the entire scalp. He stated that there was intense itching.

DERMATITIS HERPETIFORMIS. Presented by DR. MCCAFFERTY. (From the service of Dr. Kingsbury, New York Polyclinic Medical School and Hospital.)

E. B., aged 29, a clerk, presented a characteristic eruption of dermatitis herpetiformis; he said that he had had several attacks and remissions. It was an interesting feature of the case that several months before when the eruption was extremely severe he received Alpine light therapy. Almost from the beginning of the first treatment the itching disappeared and the condition cleared up entirely, only to recur a few weeks prior to presentation.

OSCAR L. LEVIN, Secretary.

NEW ENGLAND DERMATOLOGICAL SOCIETY

Regular Meeting, April 14, 1926

C. GUY LANE, M.D., *Vice-President, Presiding*

A CASE FOR DIAGNOSIS. ERYTHEMA MULTIFORME OR SYPHILIS? Presented by DR. SAWYER.

Mr. T., first seen in May, 1921, gave a history of having had a chancre and gonorrhea one year before, appearing one week after exposure. He said a Wassermann test was made and found positive. No secondary symptoms appeared. He had had six injections of arsphenamine and eight of mercury. The Wassermann test in 1921 was negative. On March 23, 1926, I saw him with the present condition. He gave the following history: About a month before a rash began on the forehead and arms and spread to the rest of the body and legs. The Wassermann test was now negative. On March 30, he was put on potassium iodide. The patient now shows a raised, ham-colored, maculopapular rash on the entire body. There is also one open granular lesion on the instep of the left foot.

DISCUSSION

DR. TOWLE: My first impression of this case was that the condition was syphilis, although the serum tests in both instances had been negative. Still there was a good history of initial infection. It looks more like a drug eruption than anything else. I made the statement that if I had been told that he was taking bromide or potassium iodide, I should accept that as the cause of the eruption.

DR. SMITH: There is a curious appearing lesion on the sole of the left foot, where the crust is entirely gone. From the clinical appearance alone, it might very well be a primary lesion. There are most interesting manifestations on the forehead and arms.

DR. LANE: I wonder whether there is any possibility of these lesions being sarcoids—the shape, very short duration, not much tenderness. I believe it is possible. I think a biopsy would help out a good deal.

A CASE FOR DIAGNOSIS. Presented by DR. APPEL.

M. deF., an Italian woman, aged 45, married, for one and one-half years had had a scaling area in the occipital region with broken-off hairs. During the past few months new spots have appeared on top of the head. When seen first a year ago, it was noted that there was also a general furfuraceous condition of the entire scalp, but this has since cleared up. There has been intense itching of the scalp since the onset. There was no similar condition in the husband or children. Two sharply outlined areas of partial alopecia were covered with short, broken-off hairs. The underlying scalp was scaly and in places decidedly thickened. There was no redness. There were two beginning areas similar to those on top of the head. No fungi were found. The treatment consisted of various antiseptic salves and recently Kromayer light.

DISCUSSION

DR. TOWLE: I should like to know whether any search was made for nits and lice. I have an idea that these patches might be traumatic. There was a severe itching, and that means breaks and tears from scratching. I think it is a case of trichorrhexis.

DR. BOARDMAN: The hairs all showed marked fragility; they are all crooked and split. I should consider it very poorly nourished hair.

DR. SWARTZ: I wonder whether one examination in the absence of fungi is sufficient to rule out the type of fungus infection which Dr. Fox described in his last paper.

DR. APPEL: On two examinations we made of cultures, the hair sheath and the root did not pull out; the hairs would break off. You could not pull out a hair as you can with most fungus hair, and the two examinations of cultures were negative.

DR. BURNS: I was rather interested from a clinical point of view. The character of the infiltration was that of lichen planus. Over the occiput the region looked as if it had been subjected to considerable trauma for a long time. The area of infiltration might be explained entirely on the basis of constant trauma producing a definite lichenoid area.

DR. OLIVER: I agree with Dr. Burns. Rubbing off the hairs would produce such lesions; scratching would do it. Her daughter said that she scratched her head all the time.

DR. SMITH: The hair has the appearance of being broken off by simple mechanical erosion rather than by disease.

A CASE FOR DIAGNOSIS. Presented by DR. OLIVER.

A woman, aged 36, had an enlargement of a gland of the neck at 16, which was operated on four times. Five years ago the present skin condition began to develop, and has been spreading since. The Wassermann test was positive a year ago, and the patient had been under treatment for syphilis without much effect on the skin lesions. She shows a destructive lesion on the face near the nasal orifices with an area of erythema about it. She has improved definitely with Alpine lamp treatment, general exposure.

DISCUSSION

DR. TOWLE: There is an interesting connection of a scrofuloderma and tubercular process. In these cases the cautery is a much quicker process than the lamp alone. The lamp seems to do very well on local areas. I think in this case a combined treatment of Alpine lamp with electric coagulation would be very useful.

DR. CASSELBERRY: This case presents two distinct features. It is a question, with the history of syphilis and also the possibility of these lesions being tuberculous, whether the combined treatment should be used. I should be inclined to think using the Alpine lamp would be safer than using electric coagulation.

DR. BLAISDELL: I consider this a case of lupus vulgaris. I have a definite opinion as to therapy in this disease, and in spite of all the theories of therapy I do not think anything can compete with the good old-fashioned curet. I am sure the cases in which we have had the best results have been those in which there has been thorough curettage and flooding with iodine, with a secondary treatment of roentgen ray or mercury lamp. I believe in a thorough eradication of the diseased tissue by the curet.

DR. BURNS: I should be inclined to agree with Dr. Blaisdell. I have been interested in that form of treatment for a long time, and reviewing the treatment of cases over a period of years, I still feel strongly that whatever other

measures are carried out, a great gain is made in the treatment in cases of lupus vulgaris by radical curettage—I mean curetting thoroughly under an anesthetic, with the idea of getting rid of all the granulomatous tissue by that means and following by roentgen-ray treatment or actinic ray.

DR. OLIVER: I showed this as a case of lupus. I do not think syphilis has played any part in this particular condition. I think it is remarkable how the patient has improved under the light treatment.

HYDROA AESTAVALE. Presented by DR. BOARDMAN.

M. S., aged 9, a girl, American. Since she was 3 years old has had lesions on the face and forearms following exposure to sunlight. The patient said they always started as bloody blisters. There was no preceding systemic reaction. There was slight itching at times. The lesions always left scars. No other members of the family were affected. The patient showed pitted scars on the face and extensor surfaces of the forearms. There was a crusted lesion on the nose and similar ones on the back of her neck. No vesicles were seen at this time.

DISCUSSION

DR. OLIVER: This is the first case of hydroa I have seen for a long time. The patients are supposed to show hematoporphyrin in the urine, which would be susceptible to light.

DR. BOARDMAN: I suggested as a treatment of this case that rouge be used in profusion. I wonder if anybody has had any experience in treating this disease with rouge. A little touching up with rouge on one part and not on the other would prove definitely whether the red did have any effect or not.

PAPILLOMA TREATED BY ELECTROCOAGULATION. Presented by DR. BOARDMAN.

A. G., aged 23, an American woman, unmarried, had had a lesion on the left leg since birth, gradually growing larger; the center became somewhat warty and broke down, causing a foul discharge. Examination showed a large, pigmented, hairy nevus about 5 inches (12.7 cm.) in diameter, somewhat raised, especially in the center, where there was some necrosis between warty projections. The tumor was removed, Oct. 16, 1925, by electrocoagulation, which was followed by painless convalescence. Operation was performed with the bipolar needle and followed by a little curetting. The pigmented tissue and the spots at the bottom the surgeon said would corrode off. The operation took about an hour. There were no complications. The patient stayed in bed until the crusts came off, and then a graft was made. The case was also shown at a previous meeting of this society. The patient now presents a clean, white scar on the left thigh, about the size of the palm.

A CASE FOR DIAGNOSIS. TUBERCULOSIS? PEMPHIGUS? Presented by DR. BOARDMAN.

Mr. C. R., aged 37, married, an Austrian, had a definite history of pulmonary tuberculosis. The trouble with the mouth began seven years ago. During this time, it cleared up once with Alpine sun lamp. Three teeth were extracted without benefit to the lesions. The lesions always start as blisters which break and leave painful ulcers. The lesions are limited to the tongue and mucous membranes of the cheeks and lips. For three months the patient has had an itching rash on the body, arms and legs. The family history was

negative for tuberculosis and carcinoma. There were thickening and superficial ulceration of the dorsum of the tongue with deep fissure. Similar lesions appeared on the mucous membranes of the lips and cheeks. A papulopustular rash occurred in places, follicular in places, going on to crusting on the body, arms and legs. The patient said that the individual lesions lasted about a week. He had been taking no medicine internally. During the two weeks before presentation, the Kromayer lamp had been used with some benefit.

DISCUSSION

DR. OLIVER: I believe this is a case of pemphigus, not tuberculosis. I admit that the lesion on the tongue is rather deep, but the patient has a history of lesions on the palate and throat that cleared up entirely, and that is not compatible with a diagnosis of tuberculosis. He further says the condition also has appeared as water blisters.

DR. BURNS: I agree with everything Dr. Oliver has said, with the reservation that I think it is possible for the process to be pemphigus or a septic condition. It seems to me the condition of the man's remaining teeth and the probable condition of the teeth that have been removed, together with his infected tonsils and indications of pharyngeal involvement, and the lung condition, also the appearance and disappearance of the lesions, indicate that it is possible for the whole process to be chronic sepsis. The ulceration of the right side of the tongue does not appear to me to be likely to be tuberculous. I think septic lesions could be brought about by septic infection of a bulla. Furthermore, it appeared that there had been a septic infection coming to a point, as he says, over the abdominal region and also on his left thigh—definite follicular infections.

DR. LANE: Have you any information about his larynx? He had a marked hoarseness.

DR. BOARDMAN: No, we have no information about his larynx.

DR. BLAISDELL: Does a man with true pemphigus live seven years?

DR. OLIVER: I think the throat specialists will tell you they have seen cases that lasted many years, and eventually showed lesions on the skin.

SCLERODERMA. Presented by DR. GARFIELD.

Mr. H. S., aged 55, a cook, married, born in Russia, for the past four months has had a lesion on the chest, accompanied by itching. The lesion started as a small papule and has spread to the present size. The patient showed a hard, porky condition of the skin about 2 inches (5 cm.) in diameter on the right side of the chest.

DISCUSSION

DR. TOWLE: This man gave a history of having been struck a severe blow in this spot a few years ago. I question whether that blow had any particular relation to this lesion.

DR. SWARTZ: I might say that we treated a patient with a similar case in the Massachusetts General Hospital with ultraviolet rays, which proved effective.

DR. GARFIELD: That treatment was ordered for this patient when he made his first visit yesterday, but I stopped the treatment so that he could be shown here today. We shall have him back tomorrow for treatment.

A Case for Diagnosis: Toxic Erythema? Pityriasis Rosea? Presented by Dr. Swartz.

Mr. H. G., aged 38, for two weeks had had a rash on the arms and legs. This began as a red blotchy rash on the face. He used Lassar's paste on the face, which brought about improvement. He did not know that he had an eruption on the trunk until he was examined in the outpatient department a week ago. Has been drinking "moonshine" at intervals. The last drink was taken on the day before the eruption was noticed. He denied any internal medication before the onset of the present illness. He admitted taking "salts" for the bowels during the first week of the eruption. He complained of itching; otherwise he felt well. His first visit to the skin outpatient department occurred a week ago. The Wassermann test was negative. The patient showed an erythematous, slightly scaly eruption over the entire body. It was definitely marginated, with a darker red border. The lesions were irregular in outline and varied greatly in size.

DISCUSSION

Dr. Macdonald: My impression was that it was a case of erythema iris.

Dr. Towle: It might be several conditions: pityriasis, the old-fashioned eczema or a drug eruption. I favor the diagnosis of a toxic erythema.

Dr. Lane: I think it presents more a picture of a toxic rash of some sort—either a drug or toxin developed internally. It does not seem to me to be due to anything external. It has some characteristics of pityriasis rosea, but the distribution is not characteristic. For want of a better name, it seems to me we can call it a toxic erythema.

Dr. Burns: I was interested in this case because I tried to make a diagnosis. I had the case before a group of students. The history is a little significant. The onset occurred apparently seventeen days ago, with a history of having drunk a large quantity of so-called "moonshine" during the preceding twelve hours. Whether that played a rôle in it or not, I do not know. At any rate, the condition followed. It came on with marked redness, swelling and itching of the face. By evening there was a definite outbreak on the arms and legs. I do not think there could have been much involvement on the trunk at that time, because the patient was ignorant of it until he came to the hospital. That process on the trunk I cannot qualify as to its evolution. I admit there are certain areas that are strongly suggestive of a pityriasis rosea, but I cannot find a single lesion that satisfies me. As to the arms and legs, I can conceive that in some respects it might have been a more marked pityriasis rosea, but I am doubtful about the other. The lesions are distinctly annular in many places. They show certain variation in color from the bright pinkish peripheries to the rather mottled bluish red centers, and as one sees them in perspective they suggest a toxic reaction of something. After seeing the patient for a considerable length of time, I felt less and less positive as to the diagnosis. I cannot help feeling that it is a toxic reaction, something ingested.

Dr. Fitzgerald: I have had two similar cases; one man had a rash from being overheated and drinking a great deal of milk. That very night lesions appeared exactly like those this man has, and after he cleaned out the bowels he was all right. This patient tells me that he drinks large quantities of milk.

Dr. Boardman: While we have a certain number of cases in drinking men in the clinic, they do not have this type of eruption. We seldom see anything of this kind.

MELANOMA. Presented by DR. OLIVER.

Mr. D. J. N., aged 31, married, has had the condition for two years. Eight weeks before presentation, he had a tumor cut out from the buttock at the Chelsea Naval Hospital. Pathologic examination revealed a "melanotic tumor, probably melanoma." The tumor had grown larger during the past year. It was blue-black and the size of a quarter. Four weeks ago, he noticed a red spot on the right shoulder, which had gradually turned black. He now shows a blue-black lesion, the size of a split pea, on the shoulder. At the border of the scar of operation in the buttock there appeared several pinhead sized, blue-black lesions.

DISCUSSION

DR. KARCHER: I was attracted by the configurations on his right eye. He said that was a lesion caused by a hot cinder some years ago. That made me think the condition might have started from the eye. I suggest that an examination be made to determine whether there might be any relation to a possible focus in the eye.

DR. OLIVER: The question comes up whether operation—the radical excision of that first lesion—has not in this case caused the spread of the disease. I believe that radical surgery is the best thing, but occasionally it does lead to a rapid spread of disease and hastens death. I think some of the French schools believe in letting these lesions alone. I have excised a number of tumors that have never recurred, and they have been melanotic under the microscope. I saw a woman who had a melanotic tumor in her ear the size of a pea, which had grown in six months. It was taken out by a surgeon and has not recurred; that was five years ago. I think if that had been left it would have kept growing and spread, sooner or later causing death.

DR. MACDONALD: Dr. Burns, have you ever had any success with radium in these cases?

DR. BURNS: I have never used radium in these cases.

YAWS. Presented for DR. B. W. HOGAN of the United States Naval Hospital by DR. CHEEVER.

Three lesions appeared on the right side of the forehead two months ago. At the age of 14, the patient had lesions all over the body similar to the present ones, which cleared up in a year or so after two injections of arsphenamine intravenously. The patient believed that his parents had the same condition. On April 9, he had 0.45 Gm. of neo-arsphenamine, and today had 0.35 Gm. of arsphenamine. Dark-field examination of forehead lesions were positive for *Treponema pertenue*. The Wassermann test was positive.

DISCUSSION

DR. TOWLE: The thing that interested me was the recurrence after treatment with arsphenamine. In the literature all authors speak of the return of yaws after one or possibly two injections of arsphenamine. This patient said that the condition came on since his enlistment in the navy. We rarely see the disease in this section of the country. Its resemblance to syphilis is always interesting—the resemblance in the lesions, the course of the disease and the striking resemblance in the organisms. We have not been able to draw any lesson from the parallelism. I think there is a lesson.

Dr. Boardman: The doctor from the navy that showed the case last week called my attention to the fact that in Guam, where they have a good deal of gangosa, they think gangosa is a late stage of yaws. I had never heard that.

Dr. Burns: While I am entirely unfamiliar with the treatment of yaws through any practical experience with it, in 1907 I had a chance to visit a clinic on the Island of Dominica. The British Government had established a department for the segregation of the many cases of frambesia. Compulsory segregation was not required, but anyone who became so indigent or so far advanced in the disease that he wished to surrender himself, had the privilege of doing so. At that time there were from 70 to 80 cases of yaws in a small village, and the patients showed all grades of the disease, from a few to a great multiplicity of lesions, varying from the typical frambesia lesions, with which I was not familiar; many seemed syphiloid and many tuberculoid. In 1913, I was down there again, and I wanted to see those lesions again. In fact, I had planned to stay over a ship at Barbadoes. I was told that the segregation colony was practically closed, because since 1908 the patients had all been treated with arsphenamine and were taken care of in the individual islands by local care, and that it was no longer necessary for the government to maintain the colony. Between 1907 and 1913 arsphenamine had come into use and been given to those patients.

Pigmented Hairy Nevus, with Growth on the Eyeball. Presented by Dr. Oliver.

A boy, aged 12, had had trouble since birth. Examination showed a black hairy nevus just at the right of the right eye, involving the outer canthus. There was also a growth on the eyeball, which interfered with vision to a considerable extent. There was another hairy nevus on the right side of the upper lip. At a consultation at the Eye and Ear Infirmary, Dr. Derby advised cutting a piece of the growth off the eyeball to determine its character. At a surgical consultation, Dr. Beth Vincent advised against surgery, at least until the character of the tumor was determined at the Eye and Ear Infirmary.

I thought it was a rather unusual condition. We are going to examine a piece of tissue from the eye at the Eye and Ear Infirmary, and if that shows anything I will let you know.

Roentgen-Ray Burn with Sun Lamp Therapy. Presented by Dr. Garfield.

Mrs. C. O., aged 45, a housewife, married, in 1900 had a tumor in the breast excised, followed by roentgen-ray treatment. She had a bad roentgen-ray burn, which healed up, leaving a scar. This scar broke down after ten years. The breast began to scale. In December, 1924, she showed the following condition: cicatrix over the central portion of the right breast. The whole right side of the chest was covered with telangiectasia and keratoses. There was an erosion of the epidermis on the right breast about 2½ inches long by 1 inch wide (6.2 by 2.5 cm.) in the largest place. The area of the telangiectasis extended over on to the left breast down on to the abdomen and on to the right upper arm. Since that time she has had forty-nine treatments with the Alpine sun lamp, beginning with two minute exposures at 15 inch (38 cm.) distance. This was gradually increased to a maximum of twenty minutes at a distance of 10 inches (25.4 cm.). The telangiectasis cleared up pretty well, and the ulceration is entirely healed.

DISCUSSION

DR. BURNS: I am willing to accept the report of improvement seen in this case with reference to an observation I made myself. For the past year and a half I have had under observation a certain patient — a man — with psoriasis, who has had it for many years and has had most of the usual treatment. He came under my care about a year and a half ago, and I began to treat him with the air cooled lamp. Incidentally, many years ago he had had roentgen-ray treatment for his psoriasis, and on the outer aspect of his left leg he had a definite roentgen-ray atrophy with telangiectasis about the peripheries, and even without certain portions of this atrophy there were outcroppings of his old psoriasis. Starting in, I did not deliberately treat that area, but in the course of time I brought that portion under the influence of the lamp, never at any time giving a charge that would produce a possible erythema so that in the course of time he has come up to a duration equal to the rest of his skin without having any reaction over the area of atrophy. What interested me was that when I did not deliberately start out to treat his roentgen-ray atrophy by the actinic ray, in the course of time with the disappearance of his psoriasis the telangiectasis had completely disappeared, so that you could hardly pick out an area where there were enlarged blood vessels, and the atrophy I feel quite sure has become decidedly active in that it is more blended with the surrounding skin. That point has interested me very much — the possibility of doing away with telangiectasia by that means. The question might also arise whether it were wise to bring that about. My experience is rather limited. I simply question whether these blood vessels being the only blood vessels in that devitalized tissue, it were wise to obliterate them.

DR. GARFIELD: The fact that this ulceration has healed up tends to show that the blood supply has not been diminished to any great extent. This process has been going on since 1924, and I think the ulceration would come back if the blood supply had been limited.

DR. LANE: I can confirm Dr. Burns' observation to a certain extent with a case I have — that of a woman who has had psoriasis of the palms and soles for many years. She was treated many years ago with the old type of roentgen ray, and sustained an atrophic telangiectasis of the hands with the psoriasis still remaining. Under lamp treatment a little more stimulating than Dr. Burns has given, it has surprised me very much to see not only the psoriasis, but a certain number of the telangiectases disappear. I had not given her any encouragement on that at all. The roentgen ray and the water cooled lamp for telangiectasis I think should be handled with a good deal of care, that is, the obliteration of blood vessels over too large an area, because it is possible to produce ulceration that will last a long time, but with small areas it can be done with very good results.

DR. APPEL: I would like to ask whether any one has done anything along the lines of prophylactic treatment by roentgen ray with compensating treatment with ultraviolet light, giving exposure of the skin to ultraviolet rays either before or after roentgen-ray treatment. Recently there has been considerable discussion in the literature about this matter, one side claiming and producing experimental evidence that doses of roentgen ray would ordinarily not produce a burn if the area had been treated with ultraviolet light either before or after irradiation, and the other side claiming the contrary.

A Case for Diagnosis: Lichen Planus? Pityriasis Rosea? Syphilis? Presented by Dr. Smith.

M. T., a boy, aged 11, had a red, itching rash which appeared over the epigastrium and between his scapulae four weeks ago, and gradually spread for a week, and then rapidly involved his entire body. The lesions itched and gave a biting sensation, the discomfort being worse immediately after the removal of his raiments. Four days ago, the lesions were practically universal. Because of the inguinal glands and other signs, the question of syphilis came up. The admission diagnostic impression was between lichen planus, pityriasis rosea and syphilis. The boy had not been able to sleep for several nights before entry on account of the itching, and was given calamine wash for his comfort. He was given one-half grain of mercuric chloride on admission. The Wassermann test was negative.

DISCUSSION

Dr. Smith: It is most unusual to have as extensive an enlargement of the glands as the patient has in the groin with lichen planus. If the lesions that he shows on the chin are syphilitic, he certainly should have a positive Wassermann test. I think it is lichen planus, for the lesions in the mouth fit well with the lesions on the body.

A Case for Diagnosis: Toxic Erythema? Presented by Dr. Smith.

Mr. J. L., aged 56, a hostler, who lives alone in a cabin, had been in perfect health until six weeks before presentation. February, 1926, after having been exposed to a strange woman, he noticed a lump on his penis. Three weeks later he consulted his doctor who gave him a white salve, some brown powders and some pink and yellow pills. (All attempts to discover the composition of these pills have failed, the local doctor refusing to answer our letter.) For two weeks he took these pills in large quantities and then stopped taking them of his own accord because of the appearance of an itching rash. His doctor replaced his pills at this time with a fluid, of which the patient took I drachm (4 cc.) three times a day in water. A red, itching rash again appeared on the patient's chest, rapidly spreading and covering the torso, arms and legs. At the same time the tongue became swollen and very sore. He was admitted to the hospital at that time, March 22, and the ulcerated remnant of primary lesion was found on the penis, and the left inguinal gland was enlarged. The skin was covered with a red, maculopapular rash most marked over the back, abdomen, thighs and on the extensor surfaces. The lesions on the back seemed to be arranged in rows and to follow the line of the ribs; elsewhere they were not in any definite order. Some of the lesions had become papular, with fine scales. In addition to the bright lesions described, there was a diffuse purplish background suggesting a crop of fading lesions. No lesions were found on the face. The lesions itched intensely, keeping the patient from sleeping. It was thought that the condition was probably some form of drug idiosyncrasy, and so no treatment involving internal medication was attempted. Nine days later, March 31, the entire picture changed and became universal erythema, still itching intensely. His soft tissues began to fill with fluid, and by April 2 he had a universal pitting edema. No cause for this could be found; the kidney excretion of phenolsulphonphthalein was above normal; the blood chemistry was normal; the heart was not remarkable; the urinary findings were normal except for a gross reduction in the output and a fixation of the specific gravity at 1.025-30. By April 6, the edema had subsided, for no apparent reason.

Dr. Oliver saw this patient, and suggested that the condition might be a mercury reaction, and suggested a course of sodium thiosulphate. This was ordered, but through an error, instead of 2 Gm. of sodium thiosulphate, the patient received 0.2 Gm. of sodium arsphenamine. He was not told of this, and for the next week received several injections of the correct drug until he remarked that the injections of late had not done him any good, that after the first one he had been comfortable for two days, but since he had become as bad as before. He was then given 0.3 Gm. of neo-arsphenamine, and for the first time slept through the night and felt no itching. The rash on the flexor surfaces of his forearms did become more intense. Four days later, he again received neo-arsphenamine, with immediate relief, so that now his only complaint is the discomfort of his arms, the rest of his body being much improved.

DISCUSSION

Dr. Boardman: Would you dare to give him any more arsphenamine?

Dr. Smith: I think the way his lesions now look, it should be done with a good deal of caution, because he has certain areas that are more deeply inflamed than they were a week ago. It is difficult to picture the way those lesions looked when he came into the hospital on March 22. At that time it seemed as though the skin lesions were due to some drug. He gave a history of having taken some pink pills given by his local physician. The question arose as to its being a phenolphthalein or acetylsalicylic acid reaction. His arms are the only places which itch now. He had a definite group of lesions in the mouth, and that with the lesions on the tongue was perfectly consistent with early secondary syphilis; also marked swelling of the tongue and rather profuse saliva in his mouth. He had a story of having taken some yellow pills, and there was a question whether he did not have a mercurial eruption. The marked eruption where the tongue impinged on the teeth would fit in with a mercurial stomatitis. At present I do not know what the condition is.

Dr. Towle: You cannot exclude the effect of his constant rubbing; that has complicated the picture. I think he probably had a mercury intoxication, and that trauma from scratching has been a strong factor in altering the syphilitic lesions and producing others.

Dr. Smith: I think it is a toxic erythema; that is as good a diagnosis as we can make.

BROOKLYN DERMATOLOGICAL SOCIETY

April 19, 1926

Dr. Throne, *Chairman*

Sarcoma. Presented by Dr. Skeer.

A. P., a girl, aged 16, born in the United States, presented an eruption along the outer border of the left foot and extending over the external malleolus and along the Achilles tendon. There were numerous nodules varying in size from that of a pea to that of a walnut, which were hard, indurated, tender and deep seated. The color varied from pink to brown. One nodule over the Achilles tendon was pigmented and verrucous. There were several split pea sized hemorrhagic macules and two pigmented macules in close proximity to

this lesion. There was a large mass palpable in the calf of the leg which was tender to pressure. Marked hyperhidrosis was present. There were varicosities of both legs. There was no history of trauma.

DISCUSSION

DR. POLLITZER: It is probable that the child had a pigmented nevus which in recent years has developed into a melanoma. It is doubtful if a diagnosis can be established without a biopsy.

DR. ABRAMOWITZ: It is difficult to make a definite diagnosis in this case without a biopsy. The pigmentation that one sees higher up on the ankle is suggestive of melanoma. I had thought originally that the child may have had a leiomyoma, which possibly had undergone degeneration.

LICHEN PLANUS AND LICHEN SPINULOSUS. Presented by DR. BERKOWITZ.

H. S., a boy, aged 14, from the Jewish Hospital, developed an eruption on the arms and legs two months before presentation. When first seen ten days previously, he exhibited on the flexor and extensor surfaces of the arms, the shaft and glans of the penis, the knees, thighs and buccal mucosa, typical, angular, violaceous papules of lichen planus.

When presented, he showed, in addition to the typical lichen planus lesions, on the extensor surfaces of the arms, on the abdomen, thighs and knees, reddish, angular papules with white projections or spines, about one sixteenth of an inch above the surface of the skin.

DISCUSSION

DR. WALZER: I cannot see why one should consider two diseases in this case — lichen spinulosus of Crocker and lichen planus. Spines are encountered in lichen pilaris, lichen spinulosus, and they are occasionally seen in lichen planus, lichen scrofulosorum and other conditions. They are not so rare in adults with lichen planus, but it is rare to find the combination in children. To my mind, this is not a case of lichen planus and lichen spinulosus, but a case of lichen planus with spines.

DR. BERKOWITZ: Crocker describes lichen spinulosus as a separate entity. It was thought to be a form of keratosis pilaris, but he asserts that it fits perfectly into the histologic picture of lichen planus.

LICHEN PLANUS OF THE MOUTH ONLY. Presented by DR. WALZER.

W. F., a man, aged 42, married, who gave no history of syphilis, had had frequent attacks of rheumatic fever since childhood. The eruption for which he was presented had developed eighteen months previously as tiny white papules in the mouth, which have increased numerically and in size. He had had various local treatments, including one radium application, without improvement.

The internal surfaces of both cheeks showed a reticulated eruption of pinhead-sized, whitish papules. Many of the papules presented a linear distribution. At the lower part of the left there was a slight erosion. The rest of the body was entirely free from eruption.

DISCUSSION

DR. ABRAMOWITZ: It is difficult to make a definite diagnosis of lichen planus from the lesions in the mouth alone. The patient should stop smoking, keep

his mouth sanitary, and remain under observation. I should like to have a Wassermann test made on this patient.

DR. WALZER: Leukoplakia can easily be ruled out. Leukoplakia occurs in flat patches. The elementary lesion here is a distinct papule which can be seen if the parts are not stretched. Also, the lacelike pattern indicates lichen planus.

INFECTIOUS ECZEMATOID DERMATITIS. Presented by DR. FRANK.

I. W., a man, aged 29, married, developed a skin disease, with redness and crusting, on the upper lip, six years before presentation. This disappeared spontaneously within two months. One year later the same condition recurred, and responded to treatment in six weeks. During the next five years he had had similar recurrences every summer. The last attack occurred in the bearded region three months before presentation and had persisted and spread to other parts of the body. When presented, the patient exhibited, on the face, neck, groin and lower extremities, sharply defined patches composed of vesicles, papules and pustules, with erythema, edema and crusting. The Wassermann test was negative. The blood count was normal. A few injections of sodium thiosulphate were given with marked improvement, but examinations of the urine did not show arsenic.

DISCUSSION

DR. CHARGIN: I suggest that the patient be examined for a focus of infection.

DR. POLLITZER: I think that the diagnosis as made applies to this case. I say that, although I am not perfectly sure as to what was meant by infectious eczematoid dermatitis. I do not believe that eczematoid dermatitis is due to any change within the system. I believe it is rather a local infection that has spread. I am very much interested in the idea that this may be an arsenical dermatitis. I have never seen an arsenical dermatitis which looks like this. The fact that injections of sodium thiosulphate produced an improvement is not significant so far as the etiologic factor is concerned.

DR. THRONE: At the Skin and Cancer Hospital, Dr. Myers and I have been doing a good deal of work with diseases that are described as eczema. As far as clinical appearances of arsenical rashes are concerned, there is little agreement. We have found that many eczematoid eruptions are due to arsenic. The blood chemistry of this patient should be studied, especially the chlorides, arsenic and sugar. The urine should be examined before and after the administration of sodium thiosulphate. In every case in which we had reason to suspect that the condition was due to arsenic, we found arsenic. As a result of past experience with similar cases, it would seem that a possible arsenical etiology must be considered very carefully in Dr. Frank's patient. We have also discovered, in cases of real eczema in which no arsenic was found by repeated examinations of the urine, that sodium thiosulphate will cause the chlorides, which are found in the skin, to leave the skin and enter the blood stream. It is important not to give too much sodium thiosulphate, because the chlorides become so concentrated in the blood stream that there will be a secondary deposit of them and a recurrence of the eczematoid condition.

LUPUS VULGARIS EXULCERANS. Presented by DR. ABRAMOWITZ.

Ruth K., a girl, aged 12, a private patient, born in this country of Rusian Jewish parents, had a negative family history. She had had two operations for bilateral mastoiditis. There was a history of sinusitis and repeated attacks

of erysipelas. The lupus developed when she was about 6 years of age. She was first seen by Dr. Abramowitz one month previous to presentation, at which time she exhibited numerous purulent and foul smelling ulcerations of the scalp and forehead. The upper lip was destroyed. The cheeks were ulcerated, and the bridge of the nose was the site of keloidal and crusted lesions. The mastoid showed scars and discharging sinuses. The operating surgeon had reported tubercle bacilli at the second mastoid operation. The physical and roentgenologic examination of the patient was negative, but she reacted to a 1:10,000 dilution of Koch's old tuberculin. The pathologic histology of the skin lesions was that of tuberculosis. The Wassermann test was negative. Dr. Schamberg had given Dr. Abramowitz a supply of a gold preparation which had been administered to the patient intravenously twice weekly. Eight injections had been given as a result of which the ulcers were healing. The patient showed a febrile reaction when 1 Gm. of the gold solution was injected, but there was no reaction with a dose of 0.75 Gm. or less. The patient was also taking gold chloride internally, 1/15 grain (0.004 Gm.) three times daily, which had caused moderate diarrhea.

DISCUSSION

DR. BERKOWITZ: While in Heidelberg last summer I was told that they used picric acid, beginning with from 0.5 to 1 per cent and increasing to from 20 to 25 per cent, with excellent results. They had used a gold preparation intravenously, but had had a number of unfavorable results.

A CASE FOR DIAGNOSIS (NEUROTIC EXCORIATIONS). Presented by DR. BEST.

Mrs. C. P., a woman, aged 35, married, had had an eruption for four years. It began on the legs and spread to the trunk and upper extremities. The lesions appeared suddenly, singly and in groups, and resembled mosquito bites. Itching was intense. Scratching or, more properly, "digging," removed the top of the lesion, which relieved the itch, and produced a shallow ulcer over which a crust formed. The crust eventually fell off, leaving a scar.

The Wassermann test had been reported four plus. The patient had been given a course of arsphenamine and mercury, after which the Wassermann test was reported negative. Six or more Wassermann tests had been made since, all of which were negative. The eruption was not affected by the treatment. Prior to the onset of the present rash the patient was under a prolonged, severe, nervous strain. The previous history otherwise was negative. On examination there was revealed numerous pigmented atrophic scars, the size of a dime and smaller, on the upper and lower extremities and trunk. They were mostly isolated, but there was some grouping. On the lower extremities there was a number of shallow, dime-sized ulcerations, some crusted and others open. They were isolated, except on the right leg, where there were four or five lesions closely grouped. All laboratory tests — chemical blood examinations, urinalyses, etc., were negative.

DISCUSSION

DR. THRONE: I saw this patient some time ago. My diagnosis was neurotic excoriations.

DR. CHARGIN: While dermatitis herpetiformis, drug eruption and leukemia might be considered, I agree with the diagnosis of neurotic excoriations made by Dr. Throne.

Drs. Pollitzer, Abramowitz and Gauvain agreed with the diagnosis of neurotic excoriations. Dr. Pollitzer suggested that the patient be sent to a psychanalyst.

Nevus Pigmentosus et Pilosus Treated with Roentgen Rays and Radium. Presented by Dr. Gauvain.

D. L., a girl, aged 16, had a pigmented and hairy nevus on the left shoulder at birth. This increased in size to an area of about 3 inches (7.6 cm.) in diameter. Three years before the presentation, she received fifty-two roentgen-ray treatments at weekly intervals. This did not result in a removal of the nevus, but merely caused epilation of the hairs. Following this, the patient received radium applications four times, quantity unknown, but the length of application was from fifteen to twenty minutes. The lesion showed atrophy, telangiectasis, and beginning degenerative changes when first seen. Dr. Gauvain had removed the nevus with part of the telangiectatic and atrophic area by electrodessication.

DISCUSSION

Dr. Abramowitz: The treatment of pigmented nevi was discussed at great length at a recent meeting of the Section on Dermatology of the New York Academy of Medicine. I am inclined to agree with Dr. Pollitzer and others who insist on radical excision with very little manipulation.

A Case for Diagnosis (Epithelioma of Chancre of Lip?). Presented by Dr. Chargin.

A man, aged 29, unmarried, an orderly, denied syphilitic infection, but admitted having had gonorrhea nine years previously. The present condition appeared about three weeks before presentation. He had been exposed to venereal infection, one week and three weeks prior to the appearance of the lesion. The lesion gradually increased in size until at the time of presentation it was about the size of a dime. It was raised, hard to the touch and somewhat painful. The surface was crusted, in part, but otherwise smooth and glistening. It was located on the lower lip just left of the median line. The patient said that he had abraded the surface of the ulcer while shaving. There was practically no adenopathy. Four dark-field examinations were negative. The Wassermann test was negative. The patient was a smoker, but did not smoke a pipe.

DISCUSSION

Dr. Best: In view of the short duration, I would doubt the diagnosis of epithelioma, and in view of the absence of submental glandular enlargement, which is distinctive of chancre of the lip, I would rule out a specific infection. I palpated the lesion, and in spite of Dr. Chargin's description of a hard rim around the border it seemed to me the lesion felt soft. Both epithelioma and chancre are indurated lesions. I am inclined to make a diagnosis of granuloma pyogenicum.

Dr. Gauvain: I agree with Dr. Best. I could find the hard, indurated border which the presenter mentioned. It was too soft a lesion for either chancre or epithelioma.

Dr. Throne: I have never seen a chancre of the lip which was not associated with enormous lymph node involvement. Chancres of the lip usually give a positive Wassermann test very early. My diagnosis is epithelioma.

DR. CHARGIN: I am inclined to agree with Dr. Throne. My only objection to epithelioma is the rapid development of this lesion. In all cases of chancre of the lip which I have seen there was always a marked regional adenopathy which is lacking in this case and which speaks against the diagnosis of chancre. I do not understand how this can be regarded as granuloma pyogenicum; it is very hard, it is not hemorrhagic, nor pustular.

NOTE: The lesion was subsequently removed surgically and found to be a squamous cell epithelioma.

LICHEN PLANUS SCLEROSUS ET ATROPHICUS. Presented by DR. BERKOWITZ.

E. H., aged 48, a widow, presented an eruption of ten months' duration, which began in the right suprascapular area, and which developed into a patch about 2 inches (5 cm.) square. The area showed scattered, angular and circular, pinhead to pea-sized, milky white and pearl-colored lesions. Some were elevated and covered with dirty gray or blackish scales or contained follicular plugs; others were slightly depressed, wrinkled and parchment-like, with borders slightly pigmented. Many of the lesions had coalesced. A similar although smaller area was located on the left scapula, and between these two patches there was a group of four pinhead-sized, discrete papules and a similar group in the dorsolumbar area. These lesions were whiter than the surrounding skin and had pigmented borders. A number of the lesions were suggestive of morphea. The patient had no subjective symptoms.

E. A. GAUVAIN, M.D., Secretary.

NEW YORK DERMATOLOGICAL SOCIETY

Regular Meeting, April 27, 1926

A. SCHUYLER CLARK, M.D., *President*

HYPERTROPHIC LICHEN PLANUS OR VERRUCOUS NEVUS. Presented by DR. WHITEHOUSE.

M. N., a youth, aged 17, said that the lesions had been present for three months. On the interior surface of the right thigh there was a linear eruption which extended to the anterior surface of the knee and skin. It consisted of several thick, keratotic patches surmounted by horny plugs which could be expressed, leaving pitlike depressions in the skin. On the shin, besides numerous keratotic lesions, there was a verrucous patch, 4 by 2 cm. in size. There were no subjective symptoms.

DISCUSSION

DR. HIGHMAN: Presumably it is a nevus, but it would seem to me necessary to rule out the hypertrophic variety of lichen planus. I think it is a case in which microscopic study will throw some light on the question.

DR. BECHET: I think one can eliminate lichen planus because of the deep plugs which can be picked out, leaving a depression. The linear distribution also suggests nevus.

DR. WISE: I favor the diagnosis of verrucous linear nevus.

DR. LANE: When the biopsy is made on this case it should be taken from two places. The lesion on the knee is chiefly a suprafollicular keratosis; on the ankle, some of the lesions are comparatively smooth. There may be two different conditions.

DR. HIGHMAN: Dr. Bechet raised a point which I think has been forgotten, for we do not often talk about lichen follicularis—a rather unusual variety of lichen planus which develops in the vicinity of follicles in which the depression in the papules seems to correspond with the openings of the follicles. In this type of follicular lesion which, whether correctly or not, is distinguished from ordinary lichen planus, we have that type of plug seen in the type to which Dr. Bechet refers. While it is conceivable that this may be that type of a linear nevus developing late in life, nevertheless I do not think the diagnosis can be made clinically alone, and a histologic examination will have to be made.

DR. WHITEHOUSE: I agree that clinically it is difficult to differentiate between lichen planus and linear nevus, and the biopsy which will be made later will probably determine the question. The short duration, in a boy of 17, is rather against its being a linear nevus; while the absence of subjective symptoms is against lichen planus. While verrucous and keratotic lichen planus does occur, I favor a diagnosis of nevus.

NEVUS LINEARIS. Presented by DR. WHITEHOUSE.

A. W., a man, aged 21, had had the condition for eighteen years. On the left thigh, posteriorly, there was a raised keratotic band, an inch or more in width, extending down toward the knee. Below the knee, the lesions were more widely scattered over the calf and were markedly excoriated. There were no keratotic plugs.

DISCUSSION

DR. HIGHMAN: It is a clear case of linear nevus, and the question of its being lichen planus could not possibly arise.

DR. ELLER: My experience has been that linear and verrucous nevus is resistent to treatment. As an example, I may cite a case which I treated about a year ago. At the first visit of the patient I employed electrodesiccation followed by what I thought was complete removal of the desiccated mass with a curet. The lesion recurred. I then treated the lesion a second time with electrocoagulation, going deeper into the tissue than the first time. The lesion recurred again. My third attempt was also with electrocoagulation, and this time I coagulated very deeply, and there was no recurrence, but very deep scars resulted. Dr. Wise and I had another patient who had a linear nevus with intolerable itching. I treated the lesions with about twelve roentgen-ray exposures combined with antipruritic lotions locally. This treatment did not control the itching, nor did the nevus improve.

DR. WILLIAMS: The question of the name is interesting. We have all seen cases of nevus unius lateris which are bilateral: here is a case presented as nevus linearis in which most of the lesions are not linear. Nevus verrucosus is sufficiently descriptive and is more comprehensive.

DR. WISE: In my experience all forms of treatment have been futile in the verrucous type of linear nevus.

DR. WHITEHOUSE: I wonder whether any one has had any results with refrigeration. I have had no permanent results with any kind of treatment; when removed the lesions always recur. If not too extensive, the lesions may be excised.

TUBERCULOSIS VERRUCOSA CUTIS. Presented by DR. SCHWARTZ.

C. M., a meat-chopper, aged 30, presented a lesion on the anterior surface of the wrist with a history of eight years' duration, which began as a superficial bullet wound. The lesion was circular, the size of a penny, slightly elevated, covered by adherent silvery gray scales and surrounded by a zone of erythema. A section from the edge of the lesion showed the histologic structure of tuberculosis.

DISCUSSION

DR. FRASER: The question of the mode of infection should be considered. Has the lesion remained stationary for seven years because the infecting organism is an attenuated type of tubercle bacillus? Another hypothesis presupposes a local immunity induced by a previous internal infection. The microscopic picture consists of lymphocytes and epithelioid cells with giant cells, but these are not the necrotic features which characterize an active type of tuberculosis.

DR. WISE: I agree with the diagnosis and believe the best treatment to be electrodesiccation.

DR. LANE: I think the best treatment would be excision. In the cases in which I have practiced excision, it has been the quickest and most satisfactory treatment. I have never had any trouble with dissemination following excision. I have used it only on comparatively small lesions.

DR. FRASER: I was always taught that excision in these cases was bad practice.

DR. WHITEHOUSE: The question of the inadvisability of excision is frequently discussed, and I have always wondered what were the end results in the cases we had twenty-five and thirty years ago when we used to curet the lesions. We had many such cases and the wounds healed quickly. I do not know whether any of the patients later developed visceral tuberculosis following that treatment.

DR. HIGHMAN: I think that the safest radical treatment in cases of cutaneous tuberculosis is some thermal method, such as the actual cautery or electrocoagulation.

DR. SCHWARTZ: I think that endothermy under local anesthesia is probably the best treatment for cutaneous tuberculosis.

DARIER'S DISEASE. Presented by DR. WHITEHOUSE.

Mrs. M. B., aged 32, presented characteristic lesions on the forehead, back of the neck, feet and palms, of five years' duration. Her grandmother, mother, and two uncles and also a brother suffered from the same affection. Another interesting feature of the case was the statement of the patient that she had a child, 12 years of age, with lesions on the palm, suggesting the possibility that the child also has the same condition, making a total of seven in this family group.

DISCUSSION

DR. WILLIAMS: I agree with the diagnosis. An interesting feature was the eruption on the back which at first glance looked like acne vulgaris.

DR. WISE: I also agree with the diagnosis, and would like to know—in an early case such as this, without marked hyperkeratotic lesions as occur in the later stage of the disease—whether roentgen-ray treatment might not prevent the progress of the lesions.

DR. KINGSBURY: This case, now seen by me for the first time, is of particular interest because all of the other members of the family have at one time or another been under my observation or treatment. As to Dr. Wise's inquiry: In my opinion roentgen-ray treatment would not permanently prevent the evolution of the eruption. As I recall it, however, considerable benefit followed applications of roentgen rays used for a certain complicated condition of the soles that at one time greatly troubled the grandmother.

DR. FRASER: I agree with the diagnosis. Recently I have had the opportunity of examining a number of precancerous dermatoses. In one of these, a case of arsenical keratosis, I was able to follow the development of a keratotic growth on the palm into a squamous cell carcinoma. In view of the marked resemblance of the histopathologic changes, particularly those found in the epidermal cells, in this class of cases to those found in Darier's disease, I am prompted to ask whether any of the members have observed the development of carcinoma in Darier's disease.

DR. WISE mentioned the case of old Mr. Lewenstein, whose photograph he had published several years ago in the *Journal of Cutaneous Diseases*, and who had a basal cell epithelioma of the inner canthus of the eye, developing on a keratosis of Darier's disease.

DR. LANE: Referring to Dr. Wise's remarks, I should like to see the roentgen ray tried on some of the eruptions in this case. We all know that the old cases are temporarily influenced by such treatment. In an early case, we might get better results.

DR. WISE: One of Dr. MacKee's patients presented the early stage of hyperkeratotic lesions in the cubital regions, which responded favorably to roentgen-ray treatment.

DR. WILLIAMS: The occurrence in three generations might be explained in two ways: either as an hereditary tissue defect or as a contagious disease transmitted from one person to another. If it is an hereditary tissue defect, which is most probable, it is hard to see how the treatment of the earliest external manifestation by the roentgen ray could prevent its development elsewhere. If, on the other hand, it is a local contagious disease, the cure of the earliest manifestation by such treatment or by any other method might well prevent its dissemination.

DR. WHITEHOUSE: I have not much to say except that I never supposed the subject of parasitology would come up now in connection with Darier's disease since the psorosperm theory has been disproved. I have always thought it an hereditary condition rather than an infection. Whether or not the roentgen ray might, in early cases, prevent further progress of the disease, I do not know. The grandmother of this patient (who is now 75 years old) was in the hospital some years ago, and she had, besides the keratotic lesions on the head and other regions, one on the sole—a very severe, serious and recalcitrant condition with ulceration. It spread over the entire sole, and she was becoming exhausted. Roentgen-ray treatment entirely cured this lesion.

A CASE FOR DIAGNOSIS: IODODERMA OR MILIARY TUBERCULOSIS. Presented by DR. BECHET.

R. R., a white woman, aged 27, from the service of Dr. Whitehouse, said that two years previously she had suffered from severe and persistent headaches. The Wassermann reaction was four plus. Her physician, concluding that the headache was due to syphilis, gave her potassium iodide, which she

had been taking persistently for two years. Three months prior to coming under observation, the eruption made its appearance. The increase was very rapid for about a month, and had remained stationary for two months. Her last prescription for potassium iodide called for 4 parts in 180 of water, of which the dose was a tablespoonful three times a day. When first seen, there were a number of large papules and nodules scattered over the face, with here and there a distinct pustule. The lesions were a copper red. The disseminate type of lupus vulgaris, as described by Tilbury Fox, was considered, but on account of the rapid incidence of the lesions, the long history of iodide ingestion and the presence of a few pustules, a diagnosis of iododerma was favored.

DISCUSSION

Dr. Wise: A diagnosis of iodide rash is rather difficult to accept, chiefly on account of the absence of lesions on the body. I would offer tentatively a diagnosis of disseminated tuberculosis of the skin, of the Tilbury Fox type.

Dr. Williams: It does not look like an iodide eruption to me, because an iodide acne would not present such an enormous number of lesions on the face with none elsewhere, and with so few pustules. Clinically, it looks like multiple benign cystic epithelioma, but that would hardly develop so rapidly.

Dr. Highman: My impression was about the same as that of Dr. Wise. The lesions are distinctly papular, and although there is a papular stage in the evolution of the iodide pustule, certainly in three months there would be more pustulation than exhibited by this patient. I think that the lesions correspond with the picture Tilbury Fox described. Furthermore, after three months of ingestion of iodide, an ioderma should be more general than the present eruption. For these reasons I regard the case as one of tuberculosis.

Dr. Fraser: While the history suggests an iodide acne, the clinical picture does not favor that diagnosis. The color and rapid development of the lesions speak against the diagnosis of benign epithelioma. In addition to the withdrawal of the drug, a biopsy should be performed. I favor the diagnosis of tuberculosis.

Dr. Eller: The lesions that this patient presents seems to me similar to those described by Humphreys in the "Ikonographia" under the name of varus nodularis.

Dr. Bechet: The history favors the diagnosis of iodide acne. While the woman has a considerable number of copper brown papules and nodules on the face, she also has a number of pustules, especially around the eyes. She says definitely that it is not more than three months since they appeared, and that would be a very rapid extension for lupus vulgaris. The differential diagnosis is a difficult one. We will, however, stop giving the iodides and make a biopsy of one of the nodular lesions on the chin.

Note.—The biopsy was made and revealed the small nodular type of disseminate lupus vulgaris of the Tilbury Fox type.

A Case of Postvaccinial Pemphigus. Presented by Dr. Williams.

In the late summer of 1923, a boy was vaccinated, and in November he developed a bullous eruption. When I first saw him in March, 1924, there was a profuse eruption of bullae, some arising from normal skin, some from erythematous plaques. There were also erythematous plaques without bullae. Under the administration of large doses of quinine and arsenic, the eruption

disappeared; but when I saw him in March, 1925, the entire skin was dry, lustreless, grayish-brown, and presented many soft urticarial lesions. The use of arsenic was discontinued, and the skin became soft and smoother. In November, 1925, the bullous eruption returned, but is said to have been more superficial than before. In March, 1925, he consulted Father Andrew in Montreal, on whose advice he took 1 drop of oil three times a day. The father of the child believed that the oil was ordinary olive oil. Within two weeks, according to the father, the eruption disappeared, but when I saw him in April, 1926, the father being still satisfied with the cure, there was an eruption on the side of the neck consisting of small erythematous plaques from some of which small bullae arose. The case is interesting as showing the obstinate and recurring nature of this dermatosis and the unreliability of lay reports of cure.

A Case of Erythema Multiforme. Presented by Dr. Highman.

The patient was originally presented in the fall of 1925 as a case of lichen planus. Dr. Goldenberg was of the opinion that it was a case of erythema multiforme. Subsequent developments proved that his views were correct.

John E. Lane, M.D., Secretary.

PITTSBURGH DERMATOLOGICAL SOCIETY

Thirty-Fourth Regular Monthly Meeting, April 29, 1926

Lester Hollander, M.D., *Presiding*

Factitious Dermatitis. Presented by Dr. Guy and Dr. Jacob.

A woman, aged 26, unmarried, presented an eruption that had been present in varying stages of evolution during the two years just preceding presentation. It began following the death of her mother and a subsequent nervous breakdown. The patient said that she was totally blind for three months (she did not see an eye specialist). On both arms, on the abdomen, particularly near the line of the laparotomy wound and the thighs there were either scars of healed lesions or flacid bullae, which she said at times appeared in the course of one hour after a preliminary itching sensation. It was noteworthy that the mucous membranes were free, and that all lesions were within easy reach of the hands. She said that she had not menstruated in three years. She had a marked anesthesia of the pharynx and cornea.

DISCUSSION

Dr. Crawford: The lesions are typically artificial, presenting decided lines and angles. Is there a history of an original dermatosis from which she might have conceived the idea of producing lesions of this type?

Dr. Beinhauer: I would call attention to the marked anesthesia of the throat and cornea. I believe this type of case and also drug eruptions are most often wrongly diagnosed.

Dr. Guy: Therapeutically, I should confront the patient and attempt to obtain her cooperation in getting back to work. It is likely that cantharides is the drug used, being suggested by a physician who applied a fly blister over

the mastoid to relieve a "neuritis." It was to be noted that the shape of several of the lesions was square or rectangular and that further when first seen she presented heavy dark circles under the eyes that were readily cured by wiping with an alcohol sponge.

A Case for Diagnosis. Presented by Dr. Barr.

Mrs. G., housewife, white, aged 35, presented an eruption of 20 years' duration, limited to and completely encircling both legs, beginning near the ankles at about the same time and extending symmetrically upward until at the time of presentation it occupied an area about 15 cm. in length. The eruption covered a very small area on each leg until about three years ago, since which time it has spread rapidly. She also had a small similar area on the outer side of the right thigh and several others along the inner sides of both feet near the soles. The lesions consisted of small, closely set blood vessels seen at the periphery; but in the plaques the areas were uniformly red, and individual vessels could not be seen. Several round, white, atrophic or cicatricial lesions from 3 to 5 mm. in diameter were seen throughout the lesions. A fine scaling was present. The patient attributes some of the white scars to chickenpox. (The Wassermann reaction, taken after the meeting, was positive.)

DISCUSSION

Dr. Guy: There are several possibilities in this case, but I believe a syphilitic change in the deeper vessels is the cause. I believe that a Wassermann reaction would be of value.

Dr. Crawford: The superficial atrophy and bright red groups of capillary dilatation, the symmetrical distribution about the lower third of both legs, over the dorsal surfaces of the toes and along the sides of the feet, and the fact that new patches are developing elsewhere induces me to consider it a poikiloderma atrophicans vasculare. The condition is gradually progressive, and it will be interesting to watch the future development of the case.

Raynaud's Disease. Presented by Dr. Guy and Dr. Jacob.

A colored man, aged 45, presented a necrosis and ulceration of practically all finger tips with a loss of tissue, including the nails. This had begun about five or six years ago with a fissuring and tenderness of the finger-nails. He was doing janitor work at the time, but the condition became so bad that he had to change to easier work. Besides necrosis there seemed to be a coldness and paleness to the terminal phalanges. The Wassermann test was negative. His wife had had one healthy child and one miscarriage.

Parapsoriasis. Presented by Dr. Hollander.

R. C., aged 14, presented a generalized eruption of 6 years' duration. The individual lesions occurred in the form of macules and maculopapules of various sizes from 2 to 10 mm. in diameter. They were smooth, shiny and covered with a fine adherent scale. The entire trunk had a reddish tint from the coalescence of lesions. The eruption had been resistant to treatment.

DISCUSSION

Dr. Beinhauer: The pruritus varies in these cases with the amount of dermatitis present. The lesions in the case are typical lichenoid parapsoriasis.

ALEPPO BOIL. Presented by DR. GUY and DR. JACOB.

A Hindu, aged 19 years, presented a lesion on the right forearm of five months' duration. It consisted of a somewhat veruccous, inflammatory mass about 1.5 by 1.5 by 0.5 cm. There were several smaller hard subcutaneous masses. The epitrochlears on the same side were enlarged and hard. The Wassermann test was negative. Biopsy showed a granuloma. (At the time of presentation a bacteriologic diagnosis had not been made.)

DISCUSSION

DR. CRAWFORD: Clinically, oriental sore was the proper diagnosis and suggested scraping the lesion for Leishman bodies. The purple color of the lesion, the indurated, rounded, rather precipitate character of the border and the warty, granular appearance of the surface was suggestive. The small granulomatous papule on the right cheek might be an early stage of the same condition. The fact that the patient had left northern India with the lesion on the arm in its incipiency and its gradual enlargement to its present stage offered support to this diagnosis.

DR. GUY: The indolent granuloma with a verruccous surface, slight ulceration, the bluish color with evident extension of the process beneath the skin for a short distance, the painless character and the indolence of the lesion, suggested Aleppo boil. Smears taken at that time were negative for Leishman bodies. Subsequently stained tissue preparation revealed Leishman-Donovan bodies contained in large mononuclear cells, and the lesions healed under the intravenous administration of tartar emetic.

PARAPSORIASIS (?). Presented by DR. CRAWFORD.

A colored girl, aged 3 years, since shortly after birth had had a superficial, dry, patchy eruption spreading over the sides of the trunk and upper portion of the buttocks, over the shoulders, upper arms and forearms and the outer surfaces of the thighs. The eruption did not change much in character in three years. The patches were dull reddish brown, dry and slightly rough to the touch, and appeared to consist of flat, shining, lichenoid thickening of the superficial epidermis. There had never been itching except when the child became overheated. The condition had been under antiseborrhoic treatment for several months without noticeable change in its appearance. The face was free from eruption. The child appeared physically normal.

DISCUSSION

DR. CRAWFORD: If this is a case of parapsoriasis, it has appeared at a very early age. Juliusberg mentions a patient 7 years of age. I have been unable to find a recorded case in a younger person in a cursory examination of the literature.

SARCOID-DARIER ROUSSY TYPE. Presented by DR. SCHWARTZ and DR. BUSMAN.

W. J. H., a colored porter, aged 32, unmarried, presented about two dozen noninflammatory, cutaneous and subcutaneous nodules of the scalp, chest, abdomen, back and upper arms. The nodules varied in size from that of a pea to that of a lesion 2 inches in diameter. The smaller, new nodules were subcutaneous and apparently not attached to the overlying skin. The older nodules were larger and involved the skin, causing a slightly papillomatous,

hyperpigmented, flat surface. The borders were very discrete. The larger lesions were slightly painful and tender to pressure. There was no tendency to ulceration or central necrosis. Neurologic examination was grossly negative. The blood Wassermann test and urinalysis were negative. The differential blood count was: red cells, 4,100,000; white cells, 7,500; polymorphonuclears, 80 per cent; large mononuclears, 3 per cent; small mononuclears, 14 per cent; transitionals, 3 per cent. Roentgen ray examination showed a slight root infiltration of the lungs and a mass of the stomach diagnosed as gastric neoplasm. The condition began with stomach symptoms, such as cramps, nausea and vomiting following a period of excessive "drinking" five months previous. Nodules soon developed after this, and had gradually grown to the present size. The patient's general condition had been gradually deteriorating. Pathologic examination revealed a tumor mass of the corium and subcutaneous tissue composed of nests of epithelioid-like cells surrounded by course strands of hypertrophic connective tissue. There was no tendency to caseation. Numerous giant cells of the sarcoma type were present as well as occasional mast cells. The vascular structures, especially veins, showed a moderate inflammatory reaction. A necropsy proved this to be a case of gastric carcinoma with metastatic nodules in the skin.

RAYNAUD'S DISEASE. Presented by DR. BEINHAUER.

Mrs. J. A., aged 34, Polish, a housewife, complained of a burning sensation of both hands. She said that the condition began one year before presentation. The symptoms gradually increased in severity until excoriations and pain became severe. Cold months caused an aggravation of symptoms, hot water applications caused swelling and pain, while cold applications aggravated the skin condition but relieved the pain. There was no history of frostbite. Both hands were swollen, tense and shiny. The fingers were fusiform shaped, of a purplish hue and ice cold to the touch. Both feet were cold and slightly cyanotic. All points were swollen and tender on manipulation. The Wassermann test was negative. Thyroid therapy had been tried without avail. Sympathectomy was recommended.

PAPULONECROTIC TUBERCULID—FOLLICLIS TYPE. Presented by DR. PHILLIPS.

A housewife, aged 21, presented numerous pinhead to pea-sized lesions scattered over the palmar and dorsal surfaces of the hands and extending to and involving the elbows. The plantar and dorsal surfaces of the feet showed similar lesions which extended up the legs to the knees. The lesions were hard and not painful, except when pressure was applied to them. All stages in their development could be noted: red spots the size of a pinhead, others larger and showing vesiculation, others pus-capped while still others showed healing and the formation of a red pitted scar. The sites of previous lesions could be noted by the resultant depressed white scars. Previous to the appearance of this eruption, three years ago, the patient had tuberculous adenitis on the right side of the neck. These glands were removed, but others appeared, until at the time of presentation masses could be palpated in the right axilla, above the right clavicle and in front of the right ear. About two years ago, she received a course of arsphenamine which in no wise affected her skin eruption. Four months ago, the patient had a miscarriage, and during the past year she has lost twenty pounds (9 Kg.) in weight. Physical examination for pulmonary involvement was negative.

A Case for Diagnosis. Presented by Dr. Barr.

A woman, aged 31, a housewife, presented on the middle third of the anterior surface of the right leg, a round, white, scarlike or atrophic lesion about 4 cm. in diameter. On the middle third of the anterior surface of the left leg were four or five similar though smaller lesions. These lesions were from 1 to 2 cm. in diameter. The patient denied injury of any sort and said that these lesions occurred without any known cause, about one year ago on the right leg and two years ago on the left leg. The blood Wassermann test was negative on two recent examinations.

DISCUSSION

Dr. Beinhauer: I consider this condition morphea.

Dr. Guy: I would diagnose erythema induratum. If the same scars were present on the calf of the leg, there would be no difference of opinion. The skin in the scars is atrophic and not sclerodermatous.

Angioma Serpiginosum. Presented by Dr. Guy and Dr. Jacob.

A woman, aged 21, said that her eruption, which was of two months' duration, appeared following a hypodermic injection of morphine sulphate, slowly spreading from the site of injection, which point was marked by a bluish black deposit suggesting extraneous material. The eruption comprised a multiform ectasia extending as a wide band from the right side of the neck to and including the thumb, index, middle and the radical portion of the ring fingers, together with a palm sized patch over the manubrium sterni surrounding the scar of a healed carbuncle, and similar lesions involving the left side of the face and the mucous membranes of the lips. Dilated capillaries were distributed irregularly over these areas as single straight or curved lines, parallel groups of two, three or more discrete pinhead sized puncta, areas of diffuse redness, and central puncta with radiating lines. Slight scaling and moderate itching were noted. Her Wassermann test was negative. Histologically there were numbers of dilated capillaries and innumerable newly formed capillaries associated with a moderate inflammatory infiltration mostly limited to the papillary and subpapillary regions.

Fred M. Jacob, M.D., Secretary.

Book Reviews

FACULTE DE MEDECINE DE STRASBOURG. TRAVAUX DE LA CLINIQUE DES MALADIES CUTANEES ET SYPHILITIQUES. PROFESSEUR L. M. PAUTRIER, 1921-1924.

This large volume is the work of Professor Pautrier and his associates in dermatology on the faculty of medicine of Strasbourg. It consists of reprints from the well-known French journals. The articles in the aggregate represent a monumental amount of labor, and indicate that Professor Pautrier's clinic is one of the most active, as well as one of the most alert, centers of dermatologic study in Europe.

FÖRHANDLINGAR VID DEN NORDISKA DERMATOLOGISKA FÖRENINGENS MÖTE, Helsingfors, 26-28 Augusti, 1924. Helsingfors: J. J. Karvonen och B. Grönroos, 1925.

The transactions of the meeting of the Scandinavian Dermatological Society for 1924 is an interesting volume, the more so because the publications are all in English, French and German, and are, therefore, available to us. This society is composed of dermatologists of Denmark, Finland, Norway and Sweden and contains the names of many men whose work is familiar. Scandinavian dermatology has a high reputation, and this volume well sustains it.

Index to Current Literature

DERMATOLOGY

Actinomycosis. I. Prieto, Gac. méd. de Mexico **57**:44 (Feb.) 1926.
Actinomycosis Bovis of Leg. G. M. Linthicum, Surg. Gynec. & Obst. **42**:688 (May) 1926.
Action of Visible Light Rays on the Skin. A. C. Guillaime: Bull. et. mém. Soc. méd. d. hôp. de Paris **50**:730 (May 7) 1926.
Agar Vaccine in Skin Infections. H. Jausion et al., Presse méd. **34**:642 (May 22) 1926.
Agranulocytosis. W. Feer, Schweiz. med. Wchnschr. **56**:551 (June 5) 1926.
American Cutaneous Leishmaniasis. C. Nicolle, Compt. rend. Soc. de biol. **94**:476 (Feb. 26) 1926.
Autohemic Treatment of Infections of the Face. R. Hinze, Zentralbl. f. Chir. **53**:987 (April 17) 1926.

Bazin's Vacciniform Hydroa. J. Nicolas et al., J. de méd. de Lyon **7**:273 (May 20) 1926.
Blood in Epidemic Smallpox. K. Ikeda, Arch. Int. Med. **37**:660 (May 15) 1926.
Brain Degeneration After Measles. K. Mosse, Jahrb. f. Kinderh. **112**:272 (May) 1926.

Central Actinomycosis of the Jaw. J. Klingsbigl, Arch. f. klin. Chir. **140**:163 (May 6) 1926.
Chafing About the Buttocks. A. B. Marfan, Nourrisson **14**:65 (March) 1926.
Classification of Mercurials. Editorial, J. A. M. A. **87**:246 (July 24) 1926.
Common Disorders of Skin. K. Colquhoun, M. J. Australia **1**:549 (May 15) 1926.
Cure of Leprosy. A. Paldrock, Dermat. Wchnschr. **82**:597 (May 1) 1926.
Cure of Lupus Under Common Salt. D. Jiménez Garcia, Siglo méd. **77**:199 (March 6) 1926.
Cure of Psoriasis. C. Serna, Rev. españ. de urol. y dermatol. **28**:62 (Feb.) 1926.
Curietherapy for Epithelioma Grafted on Lupus. A. Rosselet, Schweiz. med. Wchnschr. **56**:373 (April 24) 1926.
Cutaneous Carcinoma of Lower Extremities. C. De Asis, Ann. Surg. **83**:663 (May) 1926.
Cutaneous (Moro) Tuberculin Test in Artificial Pneumothorax Patients. H. F. Gammons, Am. Rev. Tuberc. **13**:357 (April) 1926.

Dermatitis from Occupational Dust. V. Memorskiy, Med. Oborz. **5**:54 (April) 1926.
Dermatitis from Orange Peel. R. Müller, München. med. Wchnschr. **73**:864 (May 21) 1926.
Dermatoses in Children. O. Ullrich, Klin. Wchnschr. **5**:994 (May 28) 1926.
Degkwitz Measles Serum. F. Glaser, Med. Klin. **22**:766 (May 14) 1926.
Degkwitz' Sheep Measles Serum. W. Hagen, Deutsche med. Wchnschr. **52**:871 (May 21) 1926.
Digestion and Dermatoses. O. Porges, Wien. klin. Wchnschr. **39**:566 (May 13) 1926.

Epidemiology of Scarlet Fever. A. S. Pope, Am. J. Hyg. **6**:389 (May) 1926.
Epidermomycosis Caused by Agent of Chicken Favus. A. Sartory et al., Bull. Acad. de méd., Paris **95**:510 (May 18) 1926.
Erythema and the Erythema Dose. A. Béclère, Schweiz. med. Wchnschr. **56**:361 (April 24) 1926.
Exfoliating Dermatitis. W. Szarka, Monatschr. f. Kinderh. **32**:253 (May) 1926.
External Medication in Leprosy. E. Muir, Indian M. Gaz. **61**:215 (May) 1926.

Fibromatous Tumor Containing Osteoclast-Like Cells Growing in Subcutaneous Tissue. A. Piney, Brit. J. Surg. **13**:752 (April) 1926.
Frambesia in Parahyba. E. de Almeida and O. de Oliveira, Brazil-med. **1**:172 (March 27) 1926.
Function of the Sweat Glands. Editorial, J. A. M. A. **94**:100 (July 10) 1926.

Generalized Torula Mycosis. B. Z. Rappaport and B. Kaplan, Arch. Path. & Lab. Med. **1**:720 (May) 1926.
Granuloma Fungoides. H. C. Semon, Brit. J. Dermat. & Syph. **38**:185 (May) 1926.

Heredity in Acholuric Jaundice. J. M. H. Campbell and E. C. Warner, Quart. J. Med. **75**:333 (April) 1926.
Herpes Zoster and Chickenpox. E. Hoffmann, Deutsche med. Wchnschr. **52**:864 (May 21) 1926.
Herpes Zoster, Apparently Due to Invasion of Ganglions by Round-Cell Sarcoma. H. H. P. Morton, J. Neurol. & Psychopath. **6**:296 (Feb.) 1926.
Herpes Zoster and Internal Diseases. J. Severin, Deutsche med. Wchnschr. **52**:906 (May 28) 1926.
Hydrophilia Skin Test. M. Labbé et al., Presse méd. **34**:641 (May 22) 1926.

Ichthyosis. P. Fornara, Clin. Pediat. **8**:173 (March) 1926.
Immunity in Neurotropic Ectodermoses. H. Biglieri, Rev. Soc. arg. de biol. **1**:694 (Dec.) 1925.

Leishmaniasis of the Skin. C. Nicolle, Rev. Soc. arg. de biol. **1**:689 (Dec.) 1925.

Measles Immunization. H. P. B. Jordan, Rhode Island M. J. **9**:71 (May) 1926.
Measles Prophylaxis: Use of Blood from Convalescents in School Epidemic. J. H. Townsend, Boston M. & S. J. **194**:869 (May 13) 1926.
Measles Year. C. Herrman, New York State J. Med. **26**:390 (May 1) 1926.
Multiple Skin Metastases. J. Severin, Deutsche med. Wchnschr. **52**:792 (May 7) 1926.

Osteomyelitis Variolosa. E. J. Huenekens and Leo G. Rigler, J. A. M. A. **87**: 295 (July 31) 1926.

Paracutaneous Application of Tar. V. E. Mertens, Ztschr. f. Krebsforsch. **23**:315 (May 20) 1926.
Pathogenesis of Death from Burns. H. M. Greenwald and H. Eliasberg, Am. J. M. Sc. **171**:682 (May) 1926.
Plan for Control of Contagious Diseases. W. A. Lane, Boston M. & S. J. **194**:827 (May 6) 1926.
Pompholyx Eruption Due to Iodine. R. T. Brain, Brit. J. Dermat. & Syph. **38**:191 (May) 1926.
Possible Cause for Pemphigus Neonatorum. R. E. Krigbaum, Am. J. Obst. & Gynec. **11**:494 (April) 1925.
Prophylaxis of Varicella with Vesicle Fluid. R. M. Greenthal, Am. J. Dis. Child. **31**:851 (June) 1926.
Psychic Urticaria. F. Dufke, Dermat. Wchnschr. **82**:705 (May 22) 1926.
Purpura. F. Krömeke, München. med. Wchnschr. **73**:856 (May 21) 1926.
Purpura of Anaphylactic Origin. D. Debré et al., Paris méd. **59**:566 (June 12) 1926.
Purpura with Intense Abdominal Pain as Late Complication of Scarlet Fever. R. Smith and T. A. Bertram, Canad. M. A. J. **16**:555 (May) 1926.

Radium Susceptibility of Skin Cancers. M. Pallares, Hosp. Gen., City of Mexico **1**:36 (Dec.) 1925.
Reappearance of Reaction at Site of Previous Dick Test Coincident with Appearance of Measles Rash in a Case of Measles. N. S. Ferry, J. A. M. A. **87**:241 (July 24) 1926.
Reiteration of Scarlet Fever. Ramón Cuculla and A. J. Grosso, Semana méd. **1**:648 (April 1) 1926.
Relationship of Herpes Zoster and Chickenpox. L. E. G. de Woolfson, W. H. Smith and H. Distin, Brit. M. J. **1**:902 (May 29) 1926.
Roentgen Rays in Treatment of Diseases of Skin and Other Pathologic Conditions. S. Feldman, M. J. & Rec. **123**:805 (June 16) 1926.

Sanocrysin in Treatment of Leprosy. J. J. Puente and Pierini, Semana méd. **1**:683 (April 1) 1926.
Sanocrysin in Tuberculosis of the Skin. A. Peyri, Rev. med. Barcelona **3**:139 (Feb.) 1926.
Scar Carcinoma. M. Iwamoto, Mitt. u. allg. Path. u. path. Anat., Japan **2**:573 (April 18) 1926.

Scarlatinal Lymphangitis. E. Rüscher, Deutsche med. Wchnschr. **52**:922 (May 28) 1926.

Scarlatinoid Infection Due to Streptococcus Viridans. E. Steinfield, J. A. M. A. **87**:241 (July 24) 1926.

Scarlet Fever Following Nose and Throat Operations. B. R. Lovett, J. A. M. A. **94**:96 (July 10) 1926.

Scarlet Fever Streptococcus Antitoxin. Nat. M. J. China **12**:125 (April) 1926.

Seasonal Desquamation. M. Favre and J. Gaté. J. de méd. de Lyon **7**:267 (May 20) 1926.

Sensitization of Skin to Ultraviolet Light. Linser and Kropatsch, Strahlentherap. **22**:514, 1926.

Septic Sore Throat Complicated by Erythema Nodosum. E. Shepheard, Brit. M. J. **1**:902 (May 29) 1926.

Skin and the Electrocardiogram. W. Lueg, Arch. f. d. ges. physiol. **212**:649 (May 17) 1926.

Skin and the Exudative Diathesis. A. S. Sokolow, München. med. Wchnschr. **73**:945 (June 4) 1926.

Skin Grafts. G. Ceccarelli, Arch. ital. di chir. **15**:353 (April) 1926.

Skin Hypersensitiveness. H. Schlack, Monatschr. f. Kinderh. **32**:248 (May) 1926.

Skin Test in Echinococcosis. G. Deusch, Deutsche med. Wchnschr. **52**:875 (May (21) 1926.

Skin Test in Scarlet Fever and Measles. S. de Villa, Pediatria **34**:467 (May 1) 1926.

Skin and the Visible Rays. W. Schultze, München. med. Wchnschr. **73**:943 (June 4) 1926.

Smallpox Without Eruption Following Blood Transfusion. J. R. Blalock, Ann. Clin. Med. **4**:722 (March) 1926.

Study of Herpes Virus. P. Remlinger and J. Bailly, Paris méd. **59**:536 (June 5) 1926.

Tendencies in Dermatology. L. Artz, Wien. klin. Wchnschr. **39**:589 (May 20) 1926.

Toxicity of Agent of Scarlet Fever. P. Ritossa, Pediatria **34**:505 (May 15) 1926.

Transmission of Kala-Azar in India. L. E. Napier, Indian M. Res. Memoirs **4**:219 (Feb.) 1926.

Treatment of Furuncle of the Face. M. Friedemann, Zentralbl. f. Chir. **53**:1240 (May 15) 1926.

Treatment of Pediculosis. L. Vonkennel, München. med. Wchnschr. **73**:824 (May 14) 1926.

Treatment of Psoriasis. A. Versari, Riforma med. **42**:409 (May 3) 1926.

Urticaria and Alkali Reserve. Pasteur Vallery-Radot et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:692 (April 30) 1926.

Vaccinia Variola. M. Coplans, J. Trop. Med. **29**:133 (May 1) 1926.

Visceral Tuberculosis and the Skin. R. Wigand, München. med. Wchnschr. **73**:769 (May 7) 1926.

Yaws in Chin Hills. D. D. Gulati, Indian M. Gaz. **61**:228 (May) 1926.

Xeroderma Pigmentosum (Kaposi). M. Per, Brit. J. Dermat & Syph. **38**:241 (June) 1926.

SYPHILOLOGY

Artificial Wassermann Reaction. H. Sachs et al., Klin. Wchnschr. **5**:928 (May 21) 1926.

Bismuth Poisoning Following Oral Administration of Bismuth Subnitrate. B. H. Resnik, Bull. Johns Hopkins Hosp. **38**:333 (May) 1926.

Cachexia and Wassermann Test in Infants. M. Renaud, Bull. et mém. Soc. méd. d. hôp. de Paris **50**:818 (May 21) 1926.

Calcified Gummas in the Liver. P. A. Maissa, Rev. Soc. arg. de Radio y El. **1**:47 (Dec.) 1925.

Cardio-Aortic Syphilis: Treatment. Brit. M. J. **1**:855 (May 22) 1926.

Chemotherapy of Syphilis. H. Grossmann, Med. Klin. **22**:734 (May 7) 1926.
Comparative Value of Wassermann and Kahn Tests. A. Lederer, U. S. Vet. Bur. M. Bull. **2**:456 (May) 1926.
"Conceptional Syphilis." Carle, Ann. de mal. vén. **21**:321 (May) 1926.
Conjugal Syphilis of Nervous System. A. Gordon, Am. J. Syph. **10**:201 (April) 1926.
Control of Arsphenamine Treatment by Liver Function Tests. H. A. Dixon, W. R. Campbell and N. I. Hanna, Canad. M. A. J. **16**:551 (May) 1926.

Daily Variations in Complement Fixation (Kolmer) and Precipitation (Kahn) Reactions in Untreated Syphilitic Patients. Sigmund S. Greenbaum and Elizabeth Yagle, J. A. M. A. **87**:318 (July 31) 1926.
Death Due to Bismuth Injection. C. F. Chenoy, Indian M. Gaz. **61**:234 (May) 1926.
Diagnosis of Congenital Syphilis in Older Children. E. Beretervide, Arch. latino-Am. de pediat. **20**:92 (Feb.) 1926.
Diastolic Hypertension in Syphilis. C. Legrand, Arch. d. mal. du cœur **19**:384 (June) 1926.

Endocrine Derangement with Congenital Syphilis. J. Nicolas and J. Gaté, J. de méd. de Lyons **7**:251 (May 20) 1926.
Experimental Investigations into Action of Arsphenamine. J. Schumacher, M. J. & Rec. **123**:585 (May 5) 1926.

General Paralysis and Treatment by Malaria Fever. A. R. Grant and J. D. Sylveston, J. Ment. Sc. **72**:192 (April) 1926.
Generalized Cutaneous Syphilis. H. Goodman, Am. J. Syph. **10**:222 (April) 1926.
Genital and Extragenital Venereal Chancroids; Lymphatic Complications. R. Bertoloty, Med. ibera, Madrid **20**:241 (Feb. 27) 1926.
Gold Treatment of Syphilis. L. Fournier and P. Mollaret, Compt. rend. Soc. de biol. **94**:576 (March 12) 1926.
Gummata of Urethra. N. M. Gibson and C. J. Wiley, M. J. Australia **1**:437 (May 17) 1926.

Herpes Virus in Morocco. P. Remlinger and J. Bailly, Ann. de l'Inst. Pasteur **40**:253 (April) 1926.
History of Individual Protection Against Syphilis. G. Morin, Ann. de mal. vén. **21**:327 (May) 1926.

Inapparent Experimental Syphilis. W. Worms, Deutsche med. Wchnschr. **52**:785 (May 7) 1926.
Interstitial Keratitis. L. J. Goldbach, Am. J. Ophthal. **9**:431 (June) 1926.
Intraspinal Treatment of Syphilis. O. Nast, Med. Klin. **22**:806 (May 21) 1926.
Invasion of Syphilis. F. W. Cregor and F. M. Gastineau, Indiana State M. A. J. **19**:185 (May) 1926.

Juxta-Articular Nodules in a Syphilitic. B. Sparacio, Ann. de mal. vén. **21**:241 (April) 1926.

Llama Serum in Treatment of Syphilis. E. Chabroux, Semana méd. **1**:377 (Feb. 25) 1926.

Malaria Treatment of General Paralysis. Barnhoorn, Nederl. Tijdschr. v. Geneesk. **1**:1615 (April 17) 1926.
Malaria Treatment of General Paralysis. J. de Jongh. Nederl. Tijdschr. v. Geneesk. **1**:2083 (May 22) 1926.
Malaria Treatment in General Paralysis. O. Pfister, Schweiz. med. Wchnschr. **56**:391 (May 1) 1926.
Malaria Treatment in Mental Disease. A. Marie, Rev. de méd. **42**:997, 1925.
Masked Congenital Syphilis. M. Carle, J. de méd. de Lyons **7**:261 (May 20) 1926.
Meinicke Test. F. Matzdorff, Deutsche med. Wchnschr. **52**:791 (May 7) 1926.
Melanoma of Eye in Syphilitic Rabbit. W. H. Brown and L. Pearce, J. Exper. Med. **43**:807 (June 1) 1926.
Mercurials: A Proposed Method of Laboratory Evalution and Classification. J. B. Peterson, J. A. M. A. **87**:223 (July 24) 1926.
Molluscum Contagiosum in a Syphilitic. S. González, Hosp. Gen., City of Mexico **1**:60 (Dec.) 1925.

Newer Viewpoints in Treatment of Syphilis. M. Scholtz, Am. J. Syph. **10**:273 (April) 1926.

Paresis in Negro. R. H. Foster, Am. J. Psychiat. **5**:631 (April) 1926.
Perianal Granuloma. A. A. Fernandez, Semana méd. **1**:585 (March 25) 1926.
Postmalarial Condition of Cerebrospinal Fluid in General Paralysis of Insane. J. E. Nicole and J. P. Steel, Lancet **1**:1091 (June 5) 1926.

Reactivation of Wassermann Test. H. Dufour et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:778 (May 14) 1926.
Reactivation of Wassermann Test. M. Pinard, Bull. et mém. Soc. méd. d. hôp. de Paris **50**:724 (May 7) 1926.
Reactivation of Wassermann Test in Infections. G. Milian, Bull. et mém. Soc. méd. d. hôp. de Paris **50**:795 (May 21) 1926.
Rectal Pathology Caused by Syphilis. J. F. Montague, Am. J. Syph. **10**:254 (April) 1926.
Recurrent Early Syphilis. C. C. Dennie, Am. J. Syph. **10**:205 (April) 1926.
Relapsing Fever Treatment of General Paralysis. H. Hoff and L. Horn, München. med. Wchnschr. **73**:731 (April 30) 1926.
Renal Syphilis and Syphilitic Chronic Nephritis. P. Ribierre, Médicine **7**:454 (March) 1926.
Routine Wassermann Test. Stetter, München. med. Wchnschr. **73**:822 (May 14) 1926.

Serologic Tests in Syphilitic Milk. P. Hackemann, München. med. Wchnschr. **73**:773 (May 7) 1926.
Significance of Incomplete Wassermann Reaction. J. S. Lawrence, Am. J. Syph. **10**:292 (April) 1926.
Some Factors Other Than Specific Drugs in Treatment of Neurosyphilis. A. L. Skoog, Kansas M. Soc. J. **26**:146 (May) 1926.
Syphilis of Bladder. A. Riley, Boston M. & S. J. **194**:874 (May 13) 1926.
Syphilis in Gynecologic Clinic at Rio. Nelson Barbosa, Brazil-med. **1**:43 (Jan. 23) 1926.
Syphilis of Liver Suggesting Liver Abscess. V. N. Mehta, Indian M. Gaz. **61**:230 (May) 1926.
Syphilis Masquerading as Typhoid. L. F. Blanco, Gac. méd. de Caracas **33**:13 (Jan. 15) 1926.
Syphilis in Its Relation to Eye Conditions. G. H. Bell, M. J. & Rec. **123**:796 (June 16) 1926.
Syphilis of the Stomach. V. Vasilieff and I. Mnatsakanoff, Russk. klin. **5**:539 (April) 1926.
Syphilitic Epididymitis. M. B. Parounagian and J. Wittenberg, M. J. & Rec. **123**:648 (May 5) 1926.
Syphilitic Periositis of Cervical Vertebra and Right Clavicle. L. C. Montgomery, Canad. M. A. J. **16**:563 (May) 1926.
Syphilitic Reactions. E. Epstein, Wien. klin. Wchnschr. **39**:649 (June 3) 1926.
Syphilitic Skin Manifestations. Oppenheim, Wien. klin. Wchnschr. **39**:1-22 (May 13) 1926.
Study of Testes from Syphilitic Patients. E. R. Saleeby, Am. J. Syph. **10**:215 (April) 1926.

Tabes in Two Sisters with Congenital Syphilis. J. Daube, Med. klin. **22**:687 (April 30) 1926.
Treated and Mistreated Syphilis. A. B. Jackson, Am. J. Syph. **1**:246 (April) 1926.
Treatment of Central Nervous System Syphilis. F. J. Farnell, Am. J. Syph. **10**:236 (April) 1926.
Treatment of General Paralysis. W. Sagel, Deutsche med. Wchnschr. **52**:778 (May 7) 1926.
Treatment of Idiopathic Purpura Hemorrhagica by Exposure to Mercury Vapor Quartz Lamp. J. W. Sooy and T. S. Moise, J. A. M. A. **87**:94 (July 10) 1926.
Treatment of Neurosyphilis. C. Zuckermann, Hosp. Gen., City of Mexico **1**:12 (Dec.) 1925.
Treatment of Syphilis by Benzo-Bismuth. S. B. Surti, Indian M. Gaz. **61**:214 (May) 1926.

Treatment of Tabetic Crises. M. Ortega Cardona, Hosp. Gen., City of Mexico **1**:11 (Dec.) 1925.

Treponema Pallida Antigens in Wassermann Reaction. A. J. Hinkelman, Am. J. Syph. **10**:338 (April) 1926.

Tryparsamide and Neurosyphilis. A. Pijper and E. D. Russell, South African M. Rec. **24**:173 (April 24) 1926.

Tryparsamide in Treatment of Neurosyphilis. L. Berg, Am. J. Syph. **10**:261 (April) 1926.

Tryparsamide in Treatment of Neurosyphilis. C. A. Neymann and D. E. Singleton, U. S. Vet. Bur. M. Bull. **2**:435 (May) 1926.

Twenty-Five Years of Congenital Syphilis in Boston. Philip Haskell Sylvester, J. A. M. A. **87**:298 (July 31) 1926.

Vaccination and General Paralysis. Schükry and Kerim, München. med. Wchnschr. **73**:915 (May 28) 1926.

Vernes Flocculation Test as Accessory Serologic Guide in Combat Against Syphilis. A. B. Baylis, A. E. Sheplar and W. J. MacNeil, Am. J. Syph. **10**:298 (April) 1926.

Wassermann Reaction During and After Treatment with Insoluble Mercury Salts. Finska läk.-sällsk. handl. **68**:373 (April) 1926.

Wassermann Test with the Blood Clot. H. Spranger, Klin. Wchnschr. **5**:893 (May 14) 1926.